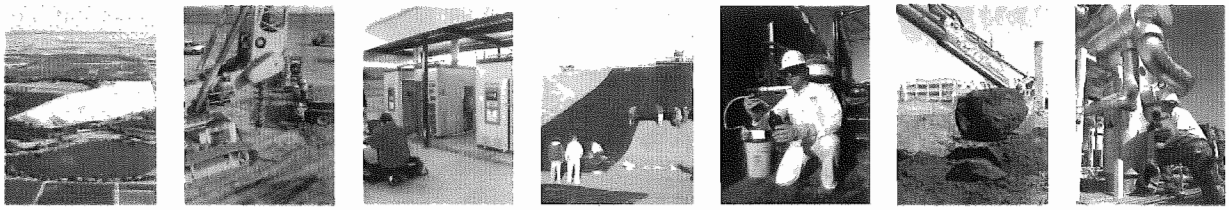
SCS ENGINEERS



AIR QUALITY IMPACT ANALYSIS
FOR FINAL REUSE PLAN
TRI-CITIES RESOURCE RECOVERY FACILITY
FREMONT, CALIFORNIA

Prepared for:

Waste Management of Alameda County
172 98th Avenue
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For Submittal to:

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November 2011
File No. 01209108.01. Task 22

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November 2011
File No. 01209108.01. Task 22

This Air Quality Impact Analysis Report for the Tri-Cities Resource Recovery Facility, dated November 2011, was prepared and reviewed by the following:

Michael O'Connor
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Senior Vice President
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TABLES

The tables are provided throughout the document and at the end of each section.

FIGURES

The figures are provided at the end of the document after the section on references and prior to the appendices. Note that all figures were previously submitted to the City of Fremont as part of the Precise Planned District Application (PPD). The Figure references listed below have been retained from the original PPD submittal.

APPENDICES

Appendix A: TCRRF Precise Planned District Project Description and Justification Statement, dated March 2011 (prepared by CH2MHILL)

Appendix B: Task Order – Acoustical and Air Impact Studies (PLN2011-00100) (prepared by Steve Kowalski, City of Fremont Planning Department)

Appendix C: Letter from Waste Management to City – Response to Tri-Cities Information Needs Request, dated July 27, 2011

Appendix D: TCRRD Conditional Use Permit, approved October 28, 1999

Attachment E: URBEMIS Output Tables

Attachment F: BAAQMD Greenhouse Gas Output Tables

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AQIA	Air Quality Impact Analysis
ATC	Authority to Construct
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAP	Criteria Air Pollutant
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulation
CO	Carbon Monoxide
DEIR	Draft Environmental Impact Report
GHG	Greenhouse Gases
HAPs	Hazardous Air Pollutants
LFG	Landfill Gas
MACT	Maximum Achievable Control Technology
MSL	Mean Sea Level
MSW	Municipal Solid Waste
NA	Not Applicable
NAAQS	Nation Ambient Air Quality Standards
NO_2	Nitrogen Dioxide
NSPS	New Source Performance Standards
NSR	New Source Review
O_3	Ozone
O&M	Operations and Maintenance
PM	Particulate Matter
PPM	Parts Per Million
POC	Precursor Organic Compound
PTO	Permit to Operate
RCRA	Resource Conservation and Recovery Act
ROG	Reactive Organic Gas
RWQCB	Regional Water Quality Control Board
SAAQS	State Ambient Air Quality Standards

SCS	SCS Engineers
SFBAAB	San Francisco Bay Area Air Basin
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
SWF	Solid Waste Facility
SWFP	Solid Waste Facility Permit
SWICS	Solid Waste Industry for Climate Solutions
TAC	Toxic Air Contaminant
TCRDF	Tri-Cities Recycling and Disposal Facility
TCRRF	Tri-Cities Resource Recovery Facility
TPD	Tons Per Day
ug/m^3	micrograms per cubic meter
USEPA	U. S. Environmental Protection Agency
VOC	Volatile Organic Compound
WMAC	Waste Management of Alameda County, Inc.
WMHC	Waste Management Healthcare Solutions

AIR QUALITY IMPACT ANALYSIS
FOR FINAL REUSE PLAN
TRI-CITIES RESOURCE RECOVERY FACILITY
FREMONT, CALIFORNIA

EXECUTIVE SUMMARY

INTRODUCTION

This Air Quality Impact Analysis (AQIA) Report was prepared by SCS Engineers (SCS) on behalf of Waste Management of Alameda County (WMAC). It was developed to provide documentation to the City of Fremont (City) for use in its evaluation of the impacts of new activities proposed as part of the Final Post-Closure Reuse Plan (Project) for Tri-Cities Resource and Recovery Facility (TCRRF) at the site of the existing Tri-Cities Recycling and Disposal Facility (TCRDF, Landfill, or Site), in Fremont, California. A *Precise Planned District Application* (PPD), which included all activities that are addressed in this AQIA, was previously submitted to the City. The attached figures, which show the Site vicinity (**Figure 1**), surrounding land use (**Figure C-1**), land use designations (**Figure C-3**), and locations and details of the proposed new activities (**Figure C-4**), were all included in the PPD.

The TCRDF is a Class III municipal solid waste (MSW) facility that has accepted waste from 1967 to the present. Relative to historical rates of waste disposal at TCRDF, the Landfill currently accepts limited amounts of waste for disposal. The Landfill is currently closed to the public; waste acceptance is exclusively comprised of commercial haulers. The Landfill is scheduled to cease all disposal operations permanently during 2012, after which final capping will be completed, and the Site will finish final closure by 2015. The proposed TCRRF development will be focused on approximately 110 acres of already disturbed area in the center portion of the TCRDF site, Multi-Use Zone 1 as shown on **Figure C-3**.

Upon final closure of the Landfill, WMAC intends to continue using the Site for various ongoing resource recovery and recycling activities, which have been previously approved by the City. In addition, WMAC proposes new operations that will be described in the "Project Description" section of this AQIA report (Report). Ongoing activities will be conducted in both Multi-Use Zone 1 and Multi-Use Zone 2, as shown on **Figure C-3**. New activities will be conducted in Multi-Use Zone 1. See **Figure C-4** for detail of this portion of the Site.

In this AQIA, SCS evaluated the potential impacts to air quality attributable to criteria air pollutant (CAP) and greenhouse gas (GHG) emissions from the Project. Toxic air contaminants (TACs) were not considered in this analysis due to the local nature of their impact and the distance of the Project from receptors and per City direction. The Project consists of the addition to the existing site of a medical waste processing operation and a retail sales building. The existing operations currently at the site that will remain as part of this project consist of the concrete and asphalt recycling, topsoil and mulch processing, and waste container repair/painting

operations. The proposed changes will not involve the disposal of any wastes. A detailed description of the Project is included in **Appendix A**.

SCOPE OF ANALYSIS

As indicated in the City's Exhibit A for PLN2011-00100 (**Appendix B**), existing operations and allowed post-closure activities for capping the landfill are covered under a previously certified Environmental Impact Report (EIR) (SCH#2006112013) and are not included in this analysis. The City's Exhibit A further specifies that the proposed methane recovery system for power generation was also previously approved and is not being considered herein. Finally, it is stated in the Exhibit A, "Since sensitive receptors are not located near the project, issues involving community risk and odors are not anticipated and would not have to be quantitatively analyzed." As such, only proposed new operations will be addressed in the Report.

There are some activities noted in the Exhibit A as new and/or expanded activities, which would be included in this scope. In its subsequent July 27, 2011 response letter to the City (**Appendix C**), WMAC provides additional information documenting these activities and operations are existing/ongoing activities, and as such should not be included in the required AQIA. SCS provides the following summary to clarify which activities are not included in this AQIA and why they are not included.

Concrete and Asphalt Recycling Operation

As stated in WMAC's July 27, 2011 letter, "The concrete and asphalt recycling operation is not a new activity. The description of the operations provided in the (PPD are equivalent to the description provided in the EIR SCH#2006112013, PLN2007-00328, and Planned District Number 2005-00232 already approved by the City of Fremont."

WMAC does not plan to expand future operations beyond previously approved concrete and asphalt recycling operations. It should be further noted, according to WMAC, there will be no new mobile or portable equipment (or expanded use of existing equipment) associated with future, concrete and asphalt recycling operations. As such, this operation is not included in this AQIA.

Top Soil and Planting Mix Processing Operations

As stated in WMAC's July 27, 2011 letter, "WMAC has confirmed with City of Fremont officials that topsoil and planting mix processing, blending, and wholesale bulk sales are existing uses consistent with the Facility's current use permit (PLN 2000-00085). As such, these activities should be listed under "Continued Uses."

Additionally, WMAC has indicated to SCS that all future haul traffic, both incoming with raw materials and outgoing with processed materials, and all future mobile and portable equipment use associated with future top soil and planting mix processing operations will be within the

scope and scale of existing, approved operations. As such these operations are not included in this AQIA.

It should be noted that the one planned activity associated with these operations that would be considered a new activity (expansion of the existing operation) is the addition of a retail sales center. This activity will involve the addition of a small building as well as the addition to the commercial sales operation of small vehicle and larger truck haul traffic associated with the retail sales. The retail sales center will be described in greater detail in the following section.

Waste Collection Cart and Steel Bin Storage, Painting and Repair

WMAC states in its July 27, 2011 letter, "As indicated in the PPD submittal, *Waste Collection Cart and Steel Bin Storage, Painting, and Repair* is an existing use at the site. Small scale refurbishing and repairs of trucks, equipment, carts and bins has historically been conducted in various locations in the Maintenance Shop area. To clarify what has been described in Section 1.5.6 of the *Project Description*, a new small enclosed structure will replace existing previously used small enclosures. The same activities at the same scale will be conducted in the new enclosure." As such these planned, future operations, with the exception of the painting operation, are neither new operations nor an expansion of any existing uses, and are therefore not included in this AQIA. The painting operation, while it is an approved use, is not currently conducted at the site according to WMAC. As such, emissions associated with this use are included in this AQIA as they would be for a new use. This activity is described in greater detail in the following section.

Equipment Information (Mobile and Portable Equipment Use)

In its July 27, 2011 letter, WMAC provided to the City a table with an inventory of all mobile and portable equipment used at the site. The table (denoted as *PPD-Equipment Inventory*), provided various information for each piece of equipment including, description, number of units, horsepower, and both current and future hourly use rates.

It should be noted that this equipment list encompasses not only equipment used for the various resource recovery and recycling activities associated with the TCRRF, but also equipment use associated with Landfill operations. As such, some of the equipment use represented on the table would clearly be outside the scope of this AQIA.

In addition, SCS noted during our review of the Equipment Inventory table (and subsequently confirmed this observation with WMAC) that the table indicates no new equipment units, and no increase in usage of any existing units associated with planned, future TCRRF operation. As such, we have concluded that emissions from no mobile or portable equipment listed on the table should be included in this AQIA. Only mobile sources (vehicles) directly associated with new operations will be included in this analysis.

ADDITIONAL USES

WMAC has proposed an electrical generation plant for the TCRRF site that is under permitting review by the Bay Area Air Quality Management District. Landfill gas generated at the site is currently combusted in an enclosed flare. The proposed plant would be a beneficial reuse project to divert landfill gas that would otherwise be burned in the flare to internal combustion engines for the generation of electricity. This proposed use is being evaluated separately and is not include in this AQIA.

PROJECT DESCRIPTION

As previously discussed, the Project has been defined by the City as any proposed new and/or expanded activities at the TCRRF. The primary new activity is the medical waste processing operation or medical waste facility (MWF). The other new activity is the addition of a retail sales capability to the existing materials processing and bulk sales operations currently conducted at the site. Both of these activities will have associated emissions from vehicle trips and structures. In addition, the MWF will have emissions associated with combustion from a boiler. A painting operation (Paint Booth), previously approved but not currently conducted is considered a new use with regard to air quality and, as such, is also included in this AQIA. A discussion of each of these new uses is provided below.

Medical Waste Acceptance, Treatment, Recycling and Transfer Facility (MWF)

This operation will be conducted in a new, fully-enclosed approximately 26,300 square foot building with an operational footprint of approximately four acres, to be located in the northeast portion of the TCRRF site, near the front entrance, as shown on Figure 2 (attached). Planned maximum operational capacity involves processing up to 75 tons per day (tpd) of various types of medical waste. An extensive list of potential waste materials is included in Section 1.5.1 of the attached Project Description (**Appendix A**). These wastes will be transformed from medical waste into MSW using three autoclaves, which will subject them to high-pressure steam for up to 30 minutes. The steam will be provided to the autoclaves by a 12.6 million British thermal units per hour (MMBTU/hr) industrial boiler fueled by natural gas. Maximum planned operation is for continuous operation of the facility. It is anticipated that the plant will employ approximately 50 workers.

Potential impacts from this operation that are evaluated in this AQIA are:

- Boiler – natural gas combustion emissions, including CAP and GHG; indirect energy emissions associated with buildings and water usage.
- Employee vehicles – CAP emissions, GHG emissions
- Haul vehicles – CAP emissions, GHG emissions
- Construction Emissions – CAP emissions, GHG emissions

Retail Landscape Products Sales Center (Retail Sales)

The retail sales center will be set up to allow both the large commercial bulk purchasing, which is already conducted at the site, and individual consumer sales of the aggregate, mulch, and top soil products, which will be a new activity. The center will consist of a delineated area for customer pick up that will be separate from the processing areas and will contain a small outbuilding for an employee to record sales and control loading operations. The operation will involve up to 2 new workers. Retail operations will be conducted up to 7 days per week. It is anticipated that the sales center will sell a maximum of 5 tons of material per day, with no more than 30 small pick-up type public loads per day. In addition, there may also be larger bulk sales, with up to 20 trucks per day. As previously noted, any on-site equipment use associated with this activity will be within the scope of current equipment usage associated with existing materials processing activities at the Site.

Potential impacts from this operation that are evaluated in this AQIA are:

- Employee vehicles – CAP emissions, GHG emissions
- Haul vehicles – CAP emissions, GHG emissions
- Construction Emissions – CAP emissions, GHG emissions

Paint Booth

As previously discussed, the Waste Collection Cart and Steel Bin Storage, Painting and Repair use category was included in a previous EIR and approved in 2007, and is generally not considered as part of the Project. However, there is currently no painting operation being conducted at the site. This activity would be subject to BAAQMD permitting requirements as a new emission source. As such, potential emissions of CAPs from the Paint Booth are included in this AQIA. There are no GHG emissions, vehicle emissions, or construction emissions associates with this activity.

BASELINE CONDITIONS

The baseline conditions for the Project are no medical waste processing, no retail products center, and no painting operation. As such, the baseline emissions are zero for all pollutants evaluated. With regard to vehicle trips, including small pick-ups, large trucks, and employee vehicles, the traffic baseline is 870 trips per day, based on data obtained by the City in May 2011 and provided to SCS.

ENVIRONMENTAL SETTING

The environmental setting for the proposed Project was evaluated in order to describe existing local and regional air quality conditions prior to initiation of the Project. An environmental setting for a project includes existing meteorological conditions, current pollutant levels,

applicable laws and regulations, and other local and/or regional characteristics, which will affect the impact that a proposed project might have on air quality. The environmental setting of the proposed Project with respect to air quality is described in greater detail within Section 2.0 of this AQIA Report.

CRITERIA AIR POLLUTANTS

Both the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established air pollution standards in an effort to protect human health and welfare. Geographic areas are designated "attainment" if these standards are met and "non-attainment" if they are not met (i.e., the National Ambient Air Quality Standards (NAAQS) or the State Ambient Air Quality Standards (SAAQS) are exceeded). Classifications for the San Francisco Bay Area Air Basin (SFBAAB) for both state and federal CAP standards are presented in ***Table ES-1***.

Table ES-1. San Francisco Bay Area Air Basin CAP Attainment Status

Pollutant	Federal Standard Classification	State Standard Classification
Carbon Monoxide	Attainment	Attainment
Ozone	Nonattainment	Nonattainment
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Nonattainment	Attainment[1] / Nonattainment[2]
Nitrogen Dioxide	Attainment	Attainment/Unclassified
Sulfur Dioxide	Attainment	Attainment

[1]For annual standard
[2]For 24-hour standard

In general, air quality in the SFBAAB is most affected by elevated levels within the basin of ozone, suspended particulate matter with a diameter of less than 2.5 microns (PM2.5), and suspended particulate matter with a diameter of less than 10 microns (PM10), which have caused the air basin to be designated as non-attainment for the state standards. Therefore, sources of ground level ozone, such as volatile organic compound (VOC) or reactive organic gas (ROG) and oxides of nitrogen (NO_x) emissions, and sources of PM10 (e.g., fugitive dust, combustion sources, etc.) are of greatest concern for the Bay Area Air Quality Management District (BAAQMD). The SFBAB is in attainment for carbon monoxide (CO), and sulfur dioxide (SO_2).

TOXIC AIR CONTAMINANTS

It is SCS' understanding that, based on the City's assessment that there are no sensitive receptors near the Site or along the truck route from the Site to the freeway, issues involving community risk do not have to be quantitatively evaluated. As such potential impacts from Project TACs are not addressed as part of this AQIA, neither at the Project nor cumulative level.

GREENHOUSE GAS

Global warming is an issue which has gained increased public attention over the last decade. Unlike emissions of CAP and TAC, which have local or regional impacts, emissions contributing to global warming have a broader global impact. Combustion of fossil fuels such as natural gas or gasoline is source of carbon dioxide (CO2), methane, and nitrous oxide (N_2O), which are GHGs. Indirect GHG emissions resulting from utility consumption at the facility also result in GHG emissions when electricity is produced or water is processed. These indirect emissions are also considered in this AQIA, per BAAQMD CEQA guidance.

PROJECT IMPACTS FROM CAP EMISSIONS

EMISSION CALCULATIONS

Medical Waste Autoclaves – Natural Gas Boiler

As previously discussed, steam for the medical waste autoclaves will be supplied by a natural gas-fired boiler with a heat rating of 12.6 MM BTU/hr. Maximum operation will be continuous operation at maximum heat capacity. CAP emissions were calculated using emission factors (EFs) from the EPA "Compilation of Air Pollutant Emission Factors" (AP-42), Part 1.4 (Natural Gas Combustion). Boiler emission calculations are presented in the following table.

Table ES-2a. Project Boiler CAP Emissions

Pollutant	Emission Factor (lb/MMBtu)	Maximum Emissions from Boiler (lb/day)	Maximum Emissions from Boiler (tons/yr)
VOCs	0.0054	1.63	0.30
NO_X	0.049	14.8	2.70
CO	0.082	24.8	4.53
SO_2	0.0006	0.18	0.03
PM_{10}	0.0075	2.27	0.41
$PM_{2.5}$	0.0075	2.27	0.41

Vehicle Engine Emissions

Daily trips, as discussed in this AQIA, refer to one-way trips rather than round-trips. Vehicle emissions associated with the Project consist of employee trips for both the Medical Waste Facility and the Retail Sales Activity, as well as haul vehicle trips for both activities. Vehicle trips were estimated based on information contained in the attached *Project Description* document (**Appendix A**).

The MWF and Retail Sales are anticipated to have a maximum of 50 and 2 employees, respectively. In its analysis of Project traffic impacts, the City determined this number of employees would generate 151 daily trips, using methodology in the Institute of Transportation

Engineers (ITE) 8th Edition Trip Generation Handbook. Haul trips associated with the MWF are expected to be comprised of a combination of 3-ton capacity vans and 6-ton capacity trucks for incoming materials, and 5 to 10 ton loads for outgoing (processed) materials, with a maximum of 80 daily trips. As a conservative estimate, all vehicle emissions are calculated using the high end of the estimated range of vehicle trips and load weights provided in the Project Description. A maximum of 100 daily trips associated with the retail sales operation are expected, including up to 30 small pick-ups hauling a total of 5 tons per day, and up to 20 large trucks with loads of up to 5,000 pounds each. Vehicle Engine CAP emissions are presented in the following table and were calculated using the URBEMIS2007 model.

Table ES-2b. Project Vehicle CAP Emissions

Pollutant	Maximum Emissions from Vehicles (lb/day)
VOCs	2.44
NO_X	4.39
CO	30.22
SO_2	0.02
PM_{10}	0.26
$PM_{2.5}$	0.16

Vehicle Road Dust Emissions

Particulate dust emissions associated with on-site vehicle travel was calculated for the Project using were EFs and methodologies from Chapter 13 of the EPA's AP-42 guidance. PM2.5 and PM10 are calculated for paved roadway surfaces. There will be no unpaved roadway surfaces traversed by Project vehicles. There are vehicle dust emissions associated with both the Medical Waste activity and the Retail Sales activity, with trip count and load weight assumptions as previously noted. Particulate dust emissions are included in Tables ES-3a and 4a.

TOTAL EMISSIONS

Project emissions are summarized in the following tables:

Table ES-3a. Project Operational CAP Emissions

Source	NOx	CO	PM10	PM2.5	SOx	ROG
	(pounds per day summer)					
Medical Waste Boiler	14.8	24.8	2.27	2.27	0.18	1.63
Operational Vehicle Emissions	4.39	30.22	0.26	0.16	0.02	2.44
Operational Area Source Emissions	0.83	2.23	0.01	0.01	0	0.69
Paint Booth						27.4
Road Dust			4.0	0.13		
Change in Emissions (Project Emissions)	20.02	57.25	6.54	2.57	0.20	32.16

Table ES-3b. Project Construction CAP Emissions

Source	NOx	CO	PM10 (exhaust)	PM10 (total)	PM2.5 (exhaust)	PM2.5 (total)	SOx	ROG
	(pounds per day)							
Construction Emissions	33.37	21.41	2.01	22.03	1.85	6.03	0.02	15.69

Table ES-3c. Project Operational GHG Emissions

Emission Source	MTCO2e/year
Operational (Vehicle) Emissions	462
Electricity	245
Natural Gas (non-boiler use)	20
Water and Wastewater	3
Solid Waste	62
Total Operational non-Stationary GHG	**792**
Boiler GHG Emissions	**5,944**

Of the operational GHG emissions shown, only the boiler emissions are a stationary source located at TCRRF. Note that there are also peak GHG emissions from construction of 3,629 pounds per day, resulting from the use of fossil fuel in construction equipment.

THRESHOLDS OF SIGNIFICANCE

Based on the BAAQMD's CEQA guidelines, operational impacts from a proposed project are considered significant under CEQA if the project resulted in a net emissions increase of the following:

- 10 tons per year (54 lbs/day) of ROG (assumed equivalent to VOC).
- 10 tons per year (54 lbs/day) of NO_x.
- 15 tons per year (82 lbs/day) of PM10.
- 10 tons per year (54 lbs/day) of PM2.5.
- Ground level concentrations of CO over 20 parts per million (ppm) averaged over 1 hour or over 9 ppm averaged over 8 hours.
- 10,000 metric tons per year of GHG for stationary sources.
- 1,100 metric tons per year of GHG for other sources.
- TAC emissions resulting in an increase in cancer risk of 10 in a million.

Please note there is no threshold of significance for sulfur oxides (SO_x) in the BAAQMD's CEQA guidelines. In the BAAQMD's New Source Review (NSR) rule (Rule 2-2) there is a major modification threshold for SO_2 of 40 tpy and a prevention of significant deterioration (PSD) threshold of 250 tpy, neither of which is exceeded by this Project. By all available guidelines, the Project SO_x emissions would not be considered significant.

Increased emissions from the Project do not exceed the BAAQMD's threshold of significance for ROG, NOx, PM10, PM2.5, or GHG. The BAAQMD thresholds for CO and TACs are local impact thresholds. Due to the distance between the Project and sensitive receptors, TAC impacts are assumed to not be significant. CO is not considered to be significant because it is consistent with the three following screening criteria from Section 3.3 of BAAQMD CEQA guidance:

- Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Tables ES-4a and ES-4b show Project CAP and GHG emissions compared to respective BAAQMD CEQA significance thresholds. All Project and Construction CAP emissions are below their respective significance thresholds.

Table ES-4a – Project CAP Emissions and Thresholds of Significance

Emission Source	ROG	NOx	CO	SO2	PM10 Dust**	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
	(pounds per day)									
Total Project Emissions	32.16	20.02	57.25	0.20	NA	NA	6.54	NA	NA	2.57
BAAQMD Threshold of Significance	54	54	none	none	none	none	82	none	none	54
	(pounds per day)									
Construction Emissions	15.69	33.37	21.41	0.02	20.02	2.01	22.03	4.18	1.85	6.03
BAAQMD Threshold of Significance	54	54	none	none	none	82	none	none	54	none

*BAAQMD CO threshold is based on resulting local CO concentration. The Project is located sufficiently far from receptors that local impacts are not considered and BAAQMD CEQA guidance only calls for CO modeling when traffic impacts have the potential to create CO hotspots.

NA = not applicable

*** PM2.5 and PM10 vehicle road dust emissions, per Table 3-3e, represent controlled emissions.*

Table ES-4b – Project GHG Emissions and Thresholds of Significance

Emission Source	MTCO2e/year
Operational (Vehicle) Emissions	462
Electricity	245
Natural Gas (non-boiler use)	20
Water and Wastewater	3
Solid Waste	62
Total Operational non-Stationary GHG	**792**
BAAQMD Threshold of Significance for non-Stationary Project Emissions	**1,100**
Boiler GHG Emissions	**5,944**
BAAQMD Threshold of Significance for Stationary Project Emissions	**10,000**

GHG impacts from the Project are less than significant.

Based on these results, no mitigation measures are required for any Project CAP or GHG emissions.

PROPOSED MITIGATION MEASURES

Project emissions are below significance thresholds for all pollutants; therefore, no mitigation measures are required.

REPORT ORGANIZATION

The main body of this AQIA Report is organized as follows. Section 1 contains introductory material; a summary of the proposed Project, and a description of general site features, history, and past facility operations. Section 2 contains information on the environmental setting of the project, including topography and meteorology, regulatory setting, a summary of ambient air quality, existing emissions from the landfill, and information on sensitive receptors. Section 3 provides detail on the methodology for all of the emission calculations utilized in the estimation of CAP and GHG emissions. Section 4 summarizes the Project impacts and mitigation measures recommended for the Project. References used in the creation of this report are contained in Section 5.

The tables are provided throughout the document. They are numbered by report section and set forth in numerical order. Tables are provided at the end of each section and/or within the text of each section. An index of tables is provided at the end of each section. Figures are provided at the end of the document and before the Appendices.

EXECUTIVE SUMMARY. INDEX OF TABLES

AIR QUALITY IMPACT ANALYSIS
FOR PROPOSED LANDFILL PROJECT
TRI-CITIES RESOURCE RECOVERY FACILITY
FREMONT, CALIFORNIA

1 INTRODUCTION

This Air Quality Impact Analysis (AQIA) was prepared by SCS Engineers (SCS) on behalf of Waste Management of Alameda County (WMAC). It was developed to provide supporting documentation for California Environmental Quality Act (CEQA) compliance for WMAC's proposed development of the Tri-County Resource Recovery Facility (TCRRF) at the site of the Tri-Cities Recycling and Disposal Facility (TCRDF), in Fremont, California (Project). A Site Vicinity Map is provided as **Figure 1**.

In this AQIA, SCS evaluated the baseline condition prior to implementation of the Project as well as the potential impacts to air quality attributable to criteria air pollutant (CAP) greenhouse gas (GHG) emissions from the Project. The Project consists of the addition to the existing site of a medical waste processing operation and a retail sales building. The existing operations currently at the site which will remain, as part of this project, consist of the concrete and asphalt recycling, topsoil and mulch processing, and waste container repair/painting operations. The proposed changes will not involve the disposal of any wastes.

In order to assess the potential air quality impacts from the proposed Project, regional and local climatic conditions were evaluated insofar as they were expected to influence the nature of air pollution originating from the Project site. Air quality standards and regulations applicable to the Project were identified and analyzed for applicability to the Project site. Current levels of air quality pollution in the San Francisco Bay Area Air Basin (SFBAAB) were researched in order to determine the baseline air quality conditions prior to the implementation of the Project and to assess the Project-specific and potential cumulative air quality impacts of the Project.

The projected CAP and GHG increases in emissions from the Project were estimated and compared to levels of significance established by the Bay Area Air Quality Management District (BAAQMD) in their *California Environmental Quality Act Air Quality Guidelines*, June, 2010 (CEQA Guidelines). Mitigation measures, if necessary to reduce pollutants below the levels of significance, were considered.

BACKGROUND

The TCRDF has operated from 1967 to the present, and is expected to cease all waste disposal operations in 2012. It is operated by WMAC. The proposed project consists of the addition of a medical waste processing operation, and the addition of a retail sales area. The current processing and recycling operations at the site (concrete/asphalt recycling, mulch/topsoil

processing, and waste container repair/painting) will continue as part of the ongoing operations at the TCRRF. Ongoing activities will be conducted in both Multi-Use Zone 1 and Multi-Use Zone 2, as shown on **Figure C-3**.

SITE DESCRIPTION AND HISTORY

The former TCRDF encompasses 378 acres and is located along the San Francisco Bay at 7010 Auto Mall Parkway in Fremont, California (see **Figure 1**). The TCRDF accepts non-hazardous solid wastes and inert wastes generated from residential, commercial, industrial, and agricultural sources. The landfill is no longer open to the public and currently accepts small volumes of waste exclusively from commercial haulers. Cessation of all disposal is expected in 2012. Interim closure, then completion of the landfill cap and final closure are expected by 2015. It is assumed that the Project will not change any operations directly related to the landfill.

Lands immediately west and south of the site have been acquired by the San Francisco Bay Wildlife Refuge and are currently being used for salt production by pond evaporation. A Pacific Gas & Electric (PG&E) substation is located to the north of the site. Additionally, some of the lands north and east of the site are being used to grow hay and for grazing by a small number of horses and cattle. An aerial photograph shows surrounding land use (Figure 1). Land use designations of adjoining properties are shown on **Figure C-1**.

The proposed TCRRF development will be focused on approximately 110 acres of the already disturbed area in the center portion of the site (Multi-Use Zone 1, as shown on **Figure C-3**). The proposed Project is discussed further in the "Project Summary" section.

PROJECT SUMMARY

The proposed new uses for the TCRRF are as follows:

- Medical waste acceptance, treatment, recycling and transfer facility.
- Retail landscape products sales center.
  Waste collection cart and steel bin painting.

The on-going operations that will continue as part of the future TCRRF site use are as follows:

- Concrete/asphalt acceptance and recycling operation.
- Mulch, landscape, and topsoil processing, blending, and sales.
- Maintenance facility to support concrete recycling, energy production, and landscape products processing operations.
- Waste collection cart and steel bin storage and repair.
- Reclamation activities in the south field borrow area including soil acceptance and filling related to landfill capping and closure.

- Landfill closure and post-closure monitoring and maintenance activities as required by the landfill closure permit.

Changes Proposed by the Project

The following summarizes the changes proposed by the Project:

Medical Waste Facility

WMAC proposes to construct a medical waste acceptance, treatment, recycling, and transfer facility. The facility will consist of a 26,300 square foot (ft^2) building located in the northeast portion of the site, near the existing front entrance. Three autoclaves will be used in the processing of the medical waste. Steam will be generated for the autoclaves by a 250 horsepower (HP) blower fueled by natural gas provided by PG&E. WMAC expects to employ 50 workers with shifts between 8am and 5pm, Monday through Friday. WMAC expects to receive and process up to 75 tons per day (tpd) of medical waste, which equates to approximately 1 ton of waste processed per autoclave per hour. The autoclaves will operate 24 hours per day. The medical waste will be trucked in from various sources, and WMAC expects up to 25 inbound trucks per day. Once processed, the medical waste will be transferred off-site for disposal, and WMAC expects up to 15 outbound shipments per day.

> Medical waste will be accepted from various healthcare and medical facilities. The medical facility will not consist of hazardous, radiological, pathological, or contaminated animal carcasses waste. The medical waste treatment process will use an autoclave ("steam sterilization") to kill all microbiological agents. The waste will be subjected to a minimum temperature of 121 degrees Celsius and a pressure of 32 pounds per square inch (psi) for approximately 30 minutes. Once treated, the sharps will be put through a grinder unit, which is a fully enclosed unit and is a water-based process. As such, there are no air quality emissions issues associated with this equipment and process. The treated medical waste will be cultured for *Bacillus stearothermophilus*, which is an indicator used to evaluate that a complete kill has been achieved in the autoclave process. Once processed, the treated waste will be loaded into solid waste containers and transported off-site to a permitted and licensed disposal or recycling facility. The primary intended destination is Altamont Landfill, a distance of approximately 50 miles. However, other sites may be used, as needed. Long-term plans involving transport of the processed waste to facilities outside the BAAQMD are also under consideration.

Retail Landscape Sales Center

The proposed retail landscape sales center will coordinate the sales of bulk materials to commercial customers and smaller individual consumer sales of the aggregate, mulch, and top soil products. The operation hours will be between 7am and 6pm, five to seven days per week. WMAC anticipates the sales center will sell up to 5 tpd to the public and up to 50 tpd of bulk sales. Outbound vehicular traffic is expected to consist of up to 30 small pick-up style trucks and up to 20 large commercial bulk trucks, for a total count of up to 100 trips per day. Inbound haul

traffic is not included in this new use, as it is already included in the approved mulch, landscape, and topsoil processing, blending, and sales activities.

Paint Booth

The Waste Collection Cart and Steel Bin Storage, Painting, and Repair use category was included in a previous EIR and approved in 2007, and is generally not considered as part of the Project. However, there is currently no painting operation being conducted at the site, and WMAC has indicated to SCS that a paint booth is being considered for the site. This activity would be subject to BAAQMD permitting requirements as a new emission source. As such, potential emissions of CAPs from this operation are included in this AQIA. There are no GHG emissions, vehicle emissions, or construction emissions associates with this activity.

Project Traffic

Based on a traffic count performed by the City in May 2011, the baseline count for the Tri-Cities site is 870 trips per day (combined vehicle and truck trips). With the addition of the trips associated with the proposed new activities, the future expected traffic count would be 1,201 trips per day, for an overall increase in site traffic of 331 daily trips above the baseline traffic. Traffic counts are summarized in the following table, and emissions associated with Project traffic are discussed in Section 3.

Table 1-1 – Project Traffic Summary

Activity	Trips
Baseline*	**870**
Project	
Retail Landscape Products Sales Center Haul Trips	100
Medical Waste Haul Trips	80
Employee Trips**	151
Total Project Trips	**331**
Baseline + Project	**1201**

* Data provided by City.

** Data provided by City, based on 52 Project employees and calculated by City, using methodology in ITE Use #110, 8th Edition Trip Generation Handbook.

Existing Activities Continuing as part of this Project

The following are current activities at the site that will either continue in the current capacity or will be modified as part of the project. Note that material throughput levels for all of the following existing activities will be less than or equal to historical production levels and/or levels approved under a previous EIR.

Concrete and Asphalt Recycling Operation

WMAC proposes to continue the concrete and asphalt recovery and recycling operations currently on site, but proposes to expand the current operation to include portions of the south field as needed. The current operation is located in the northeast portion of the site. The facility will consist of crushing equipment, conveyor belts, and support trailers. Dust abatement will be achieved through water sprays on loaded trucks, material stockpiles, and on the material during processing. WMAC anticipates production of up to 150,000 tons per year of aggregate base and other construction products, and up to 64 truck trips per day. Operation hours will be 8am to 5pm, Monday through Friday.

The TCRRF concrete and asphalt recycling operation will receive construction waste from commercial and residential sources. The trucks delivering the waste will enter through the main gate, and will off load the materials in the concrete recycling operations area. The materials will be processed by a portable crushing unit located near the middle of the operations area. The processed materials will be segregated and stockpiled. Bulk sales of the recycled materials will generally take place in the operations area, where loading will be directly from the stockpiled recycled materials. Retail sales of aggregate product to the public will be through the retail landscape products sales center.

Mulch, Landscape, and Topsoil Products Processing, Blending, and Sales

A mulch, landscape, and topsoil processing, blending, and sales operation will continue as part of the Project. Clean pre-sorted wood waste and/or compost materials will be received from the Davis Street Transfer Station, Guadalupe Landfill, Redwood Landfill, or other sources. WMAC anticipates up to 500 tpd of material received and up to 20 inbound and outbound trucks per day. Operation hours will be 6am to 5pm, Monday through Saturday. Composting of green waste materials is not proposed as part of this planned operation.

The materials accepted will be finished compost products. The materials will be processed by grinding the wood, screening the ground wood, colorizing mulch, storage and stockpiling materials, and blending mulch unders with compost and soil to produce a topsoil mixture. The operation will also screen and colorize decorative rock produced from the concrete recycling operation. The mulch, rock, and topsoil will be sold to internal and commercial customers and/or directly to the public via the retail landscape products sales area.

Maintenance Facility to Support Operations

Most of the TCRRF operations will be supported by an on-site maintenance facility. The current maintenance building complex is located in the northwest corner of the site, and will continue to be utilized for maintenance activities, with some minor improvements and building updates. Two temporary buildings will be added to the maintenance building complex to house facilities for both the maintenance and site operation staff as needed. The maintenance staff will consist of two full-time employees working shifts between 6am and 5pm, Monday through Friday.

Waste Collection Cart and Steel Bin Storage, Painting, and Repair

Waste container storage currently exists at the site. WMAC proposes to develop container repair and painting areas in the eastern portion of the existing maintenance repair facility. The container storage activities will continue, but the extent will be reduced. The activity will include a small structure and paint booth where welding, painting, and other container activities will occur. Operational hours will be between 7am and 4pm, Monday through Friday. Estimated truck trips will be up to 15 per day.

These planned, future operations, with the exception of the painting operation, are neither new operations nor an expansion of any existing uses, and are therefore not included in this AQIA. The painting operation, while it is an approved use, is not currently conducted at the site. As such, it is considered a new use for purposes of this AQIA, and associated emissions are included in this analysis.

Reclamation Activities

As discussed in the City's 2007 Draft Environmental Impact Report (DEIR) for the TCRDF Landfill Closure and Land Use Plan, landfill closure activities will include capping the landfill with an estimated 400,000 to 542,000 cubic yards (cy) of soil. The soil is expected to be derived primarily from on-site sources, with the balance of the soil coming from suitable off-site sources, as needed. As indicated in the 2007 DEIR, between 25,000 and 185,000 cubic yards may need to be imported from off site. It should be noted that WMAC has indicated to SCS that current estimates are for importing soil volumes nearer the lower end of that range, and possibly even below 25,000 cy. These reclamation activities were included in an amendment to the TCRDF CUP approved by the City in 2007; therefore no emissions associated with these activities, including truck trips, are required to be included in this AQIA.

SECTION 1. INDEX OF TABLES

2 ENVIRONMENTAL SETTING

The environmental setting for the proposed Project was evaluated in order to describe existing local and regional air quality conditions prior to initiation of the Project. An environmental setting for a project includes existing meteorological conditions, current pollutant levels, applicable laws and regulations, and other local and/or regional characteristics, which will affect the impact that a proposed project might have on air quality.

Federal and state air quality standards have been established for CAPs, including: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), suspended particulate matter (PM_{10}), and lead (Pb). The United States Environmental Protection Agency (EPA) has promulgated National Ambient Air Quality Standards (NAAQS) for these CAPs to protect public health and welfare; the State of California has also published standards (termed State AAQS or SAAQS) for these pollutants. The federal and state ambient air quality standards for the CAPs are listed on Table 2-1, provided at the end of this Section.

Documented health effects from the exposure to these pollutants include acute respiratory infections, chronic bronchitis, pulmonary emphysema, and bronchial asthma. These pollutants are emitted from a variety of industrial sources including power plants, wastewater treatment facilities, hospitals, oil refineries, natural gas production facilities, gasoline stations, and automobiles.

The ability of a state or designated air basin within California to meet these standards becomes the basis for how sources of CAPs are regulated within that basin, including how CAP emissions from proposed projects are evaluated under CEQA. Since the proposed Project is a source of these CAPs, Project air pollutant emissions must be considered in any CEQA analysis of the Project.

In addition to the CAPs, the Project will result in the emission of greenhouse gas (GHG) that contributes to global warming. Global warming is an issue which has gained increased public attention over the last decade. Unlike emissions of CAP, which have local or regional impacts, emissions contributing to global warming have a broader global impact. Combustion of fossil fuels such as natural gas or gasoline is source of carbon dioxide (CO2), methane, and nitrous oxide (N2O), which are GHGs. Indirect GHG emissions resulting from utility consumption at the facility also result in GHG emissions when electricity is produced or water is processed. These indirect emissions are also considered in this AQIA, per BAAQMD guidance.

TOPOGRAPHY AND METEOROLOGY

The primary factors that determine air quality are the locations of air pollutant sources and the amounts of pollutants emitted. Topographical and meteorological conditions are also important. The project site is located within Alameda County, which lies within the southeastern portion of the SFBAAB.

The SFBAAB is comprised of the nine counties which surround San Francisco Bay; San Francisco, Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, and San Mateo Counties. Mountains surround to elevations ranging from approximately 1,000 feet above mean sea level (msl) to more than 3,000 feet above msl, with the exceptions of breaks to the east (Carquinez Strait), to the north along the Petaluma River, and to the south in the vicinity of the City of San Jose.

The semi-permanent, high pressure cell in the eastern Pacific is the basic controlling factor in the climate of the entire SFBAAB. In the summer, the high pressure cell is dominant and causes persistent west and northwest winds over the entire California coast including the SFBAAB.

In the fall, the surface winds become weak, and the marine layer grows shallow, sometimes dissipating altogether. The air flow is occasionally reversed in a weak offshore movement, and the relatively stationary air mass is held in place by the Pacific High pressure cell, which allows pollutants to build up over a period of a few days. During the winter, the Pacific High migrates southward and has less influence on the air basin. The general absence of deep, persistent inversions and the occasional storm systems usually result in good air quality for the basin as a whole in winter and early spring.

Temperature and Precipitation

The SFBAAB has a "dry subhumid mesothermal" climate with cool to warm, rainless summers with some fog and cool, moist winters. The landfill vicinity is characterized by mild, dry summers and cooler winters. Climate data for the nearby San Jose International Airport indicates a mean annual temperature of 55° to 60° Fahrenheit. Temperatures range between 55° and 80° in summer and between 40° and 65° in winter.

Average precipitation for the City of Fremont is approximately 15 inches per year, falling primarily during the November through April rainy season.

LAWS AND REGULATIONS

Regulation of air quality is achieved through both federal and state standards and emission limits for individual sources of air pollutants. The following subsections provide a synopsis of federal, state and regional air regulations that are pertinent to the Project. Note that although the Project is located on the TCRDF site, all activities related to the landfill, through post-closure, have been reviewed as part of the EIR for the TCRDF Landfill Closure and Land Reuse Plan, which was certified in October, 2009. As such, landfill-related activities are not addressed in this AQIA and laws and regulations associated with landfill operations are not included in this section.

Federal

The 1977 federal Clean Air Act (CAA) and the 1990 amendments to the CAA required the USEPA to identify NAAQS to protect public health and welfare. NAAQS have been established

for the following CAPs: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb. USEPA publishes criteria documents to justify the choice of standards.

In 1997, USEPA adopted new national ozone standards, but subsequently revoked the 1-hour standard in June 2005; the 8-hour ozone standard remains 0.08 ppm. In 2006, USEPA lowered the national 24-hour PM2.5 standard from 65 µg/m3 to 35 $\mu g/m^3$. Additional details pertaining to the federal and state AAQS can be found in Table 2-1.

Pursuant to the 1990 CAA Amendments (CAAA), the EPA has classified air basins (or portions thereof) as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the NAAQS have been achieved.

The CAA requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The 1990 CAAA additionally required states containing areas that violate NAAQS to revise their SIPs to incorporate additional control measures to reduce air pollution. The USEPA has responsibility to review all state SIPs to determine if they conform to the mandates of the CAAA and will achieve air quality goals when implemented.

Regulation of TACs, termed Hazardous Air Pollutants (HAPs) under federal regulations, is achieved through federal and state controls on individual sources. Federal law defines HAPs as non-criteria air pollutants with short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects. The 1977 CAAA required the USEPA to identify and set forth National Emission Standards for Hazardous Air Pollutants (NESHAPs) to protect public health and welfare.

The 1990 CAAA established a technology-based approach for reducing air toxics, such that designated HAPs are regulated under a two-phase strategy. The first phase involves requiring facilities to install Maximum Achievable Control Technology (MACT). MACT includes measures, methods and techniques, such as material substitutions, work practices, and operational improvements, aimed at reducing toxic air emissions. MACT standards already exist in draft or final form for over 50% of the 174 source categories (under the air toxics program, facilities having similar operating processes are grouped into categories) that are to be eventually regulated. Standards have been and will continue to be promulgated incrementally under the following schedule: 1994 (39 categories), 1997 (62 categories), and 2000 (67 categories).

Under the federal 1990 CAAA, major stationary sources are required to obtain Title V operating permits. Title V is a federally-enforceable state operating permit program set forth under 40 Code of Federal Regulations (CFR) Part 70. Major sources of CAPs or HAPs are required to apply for and obtain Title V operating permits. The Title V programs are developed at the state or local level, as outlined in 40 CFR Part 70. A Title V permit is an umbrella permit, which consolidates all federal, state, and local air quality regulations and requirements into one permit. Although the Title V permit is required in addition to any Authority to Construct permits or Permits to Operate required by any local agency, these additional permits are incorporated into the Title V permit and, thus, the Title V permit becomes the overall guiding document for air quality compliance at a site. Currently, the TCRDF has a Title V Operating Permit. New permitted sources from the Project must be included in the Title V Operating Permit.

State

The California Air Resources Board (CARB), California's state air quality management agency, regulates mobile emissions sources and oversees the activities of local Air Pollution Control Districts (APCDs) and regional Air Quality Management Districts (AQMDs). The CARB regulates local air quality indirectly through the SAAQS and vehicle emission standards, by conducting research activities, and through its planning and coordinating activities. Other CARB duties include monitoring air quality in the state. The CARB has established and maintains, in conjunction with local APCDs and AQMDs, a network of sampling stations that monitor what the pollutants levels are actually present in the ambient air.

California has adopted ambient standards that are more stringent than the federal standards for the CAPs and are shown in Table 2-2. Under the California Clean Air Act (CCAA), patterned after the federal CAA, areas have been designated as attainment or non-attainment with respect to SAAQS.

California state law defines TACs as air pollutants having carcinogenic or highly toxic non-carcinogenic effects. The State Air Toxics Program was established in 1983 under AB 1807 (Tanner). Over 200 substances have been designated TACs under California law; they include the 188 (federal) HAPs adopted in accordance with AB 2728 and additional chemicals regulated by the state.

The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources; however, AB 2588 does not directly regulate or limit air toxics emissions. TAC emissions from individual facilities are quantified and prioritized. Under AB 2588, "high-priority" facilities are required to perform an HRA and, if specific thresholds are violated, are required to communicate the results to the public in the form of notices and public meetings. Depending on the risk levels, emitting facilities are required to implement varying levels of risk reduction measures. The BAAQMD implements AB 2588 and is responsible for prioritizing facilities that emit air toxics in the SFBAAB.

In 2006, California passed Assembly Bill 32 (AB32), which requires the CARB to conduct GHG inventories and issue regulations for certain source categories to report and/or reduce GHG emissions. CARB is also working on a statewide cap and trade program.

Regional

The BAAQMD was formed in 1955 to oversee air quality matters in the SFBAAB. The main office of the BAAQMD is located in the City of San Francisco. The BAAQMD is responsible for controlling stationary sources of pollution, as well as implementing transportation control measures to reduce mobile source emissions.

The BAAQMD is responsible for implementing and enforcing the New Source Performance Standards (NSPS), Emissions Guidance (EG), MACT, and Title V programs for landfills. The BAAQMD also issues permits to operate (PTO), for facilities, including TCRDF, which meet the

permitting criteria specified in Regulation 2, Rule 1 (Rule 2-1). BAAQMD PTOs must be renewed annually.

BAAQMD Rule 2-1 specifies authority to construct (ATC) and permitting requirements for new or modified sources. An ATC/PTO may be required to be obtained from the BAAQMD for the proposed TCRRF project.

BAAMQMD Rule 2-2 describes new source review (NSR) requirements. The Rule applies to all new and modified emission sources subject to applicable Rule 2-1 permitting requirements. The purpose of the Rule is to provide for the review of new and modified sources and provide mechanisms, including the use of Best Available Control Technology (BACT), BACT for toxics (TBACT), and emission offsets, by which ATCs for such new and modified sources may be granted. This Rule implements the no net increase requirements of Section 40919 (a)(2) of the California Health and Safety Code.

BAAQMD Rule 2-5 describes requirements pertaining to NSR of TACs. The purpose of the rule is to provide for the review of new and modified sources of TAC emissions in order to evaluate potential public exposure and health risk, to mitigate potentially significant health risks resulting from this exposure, and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced.

CRITERIA AIR POLLUTANTS

The air quality of the SFBAAB is determined by routinely monitoring changes in the quantities of criteria pollutants in the ambient environment. Air quality in the area is a function of the criteria pollutants emitted locally, the existing regional ambient air quality, and the meteorological and topographic factors, which influence the intrusion of pollutants into the area from sources outside the immediate vicinity.

The CARB and BAAQMD maintain ambient air quality monitoring stations at numerous locations throughout the basin. The stations provide information on average concentrations of criteria air pollutants. These data are measured against the air quality standards the EPA and CARB have established in an effort to protect human health and welfare. These standards are listed in **Table 2-1** at the end of this section. Geographic areas are designated "attainment" if these standards are met and nonattainment if they are not met. Attainment classifications for the SFBAAB for both state and federal CAP standards are presented in **Table 2-2**:

Table 2-2. San Francisco Bay Area Air Basin CAP Attainment Status

Pollutant	Federal Standard Classification	State Standard Classification
Carbon Monoxide	Attainment	Attainment
Ozone	Nonattainment	Nonattainment
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Nonattainment	Attainment[1] / Nonattainment[2]
Nitrogen Dioxide	Attainment	Attainment/Unclassified
Sulfur Dioxide	Attainment	Attainment

[1]For annual standard
[2]For 24-hour standard

Air Pollutant Properties, Effects, and Sources

The following section describes the pollutants of greatest importance in the SFBAAB, including a description of the physical properties, the health and other effects of the pollutant, and its sources. In general, air quality in the SFBAAB is most affected by elevated ozone and PM_{10} levels within the basin, which have caused the air basin to be designated as non-attainment for the state standards. Therefore, sources of ground level ozone, such as volatile organic compounds (VOCs) and NO_2 emissions, and sources of PM2.5 and PM10 (e.g., fugitive dust, combustion sources, etc.) are of greatest concern for the BAAQMD. CO levels within the basin are also of concern but to a lesser extent. SO_x is not considered to be a pollutant of concern for this Project, and is not currently an air quality issue within the SFBAAB. Ambient levels of SO_X are well below federal or state standards.

Ozone (O_3)

O_3 is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere. Through a complex series of photochemical reactions, in the presence of strong sunlight and ozone precursors (NO_x and VOCs), O_3 is created. Motor vehicles are a major source of O_3 precursors. O_3 causes eye and respiratory irritation, reduces resistance to lung infection, and may aggravate pulmonary conditions in persons with lung disease.

Carbon Monoxide (CO)

CO is an odorless, invisible gas usually formed as a result of incomplete combustion of organic substances and is primarily a winter pollution problem. Motor vehicle emissions are the dominant source of CO in the SFBAAB (CARB, 1997). CO concentrations are influenced by the spatial and temporal distributions of vehicular traffic, wind speed, and atmospheric mixing. High levels of CO can impair the transport of oxygen in the bloodstream, thereby aggravating cardiovascular disease and causing fatigue, headaches, and dizziness.

Respirable Particulate Matter (PM)

PM_{10} and $PM_{2.5}$ consist of particulate matter 10 microns and 2.5 microns, respectively, or less in diameter (one micron is one one-millionth of a meter), which can be inhaled. Relatively small

particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorine or ammonia) that may be injurious to health. Primary sources of PM emissions in the SFBAAB are entrained road dust, industrial operations, and fugitive windblown dust.

The amount of particulate matter, PM2.5 and PM10 generated is dependent on the soil type and the soil moisture content. Vehicle traffic generates particulate matter and PM2.5 and PM10 emissions through entrainment of dust and dirt particles that settle onto roadways and parking lots.

Sulfur Oxides (SOx)

SO_x is not considered to be a pollutant of concern for this project, and is not currently an air quality issue within the SFBAAB. Ambient levels of SO_x are well below federal or state standards.

EXISTING BASELINE EMISSIONS

The baseline for this project is no medical waste processing, no retail sales, and no painting. As such, no emission sources are associated with the baseline condition.

SENSITIVE RECEPTORS

No sensitive receptors are located in the expected area of impact for the Project.

SECTION 2. INDEX OF TABLES

Table 2-1 is provided on the following page; Table 2-2 is provided within the section text.

TABLE 2-1. STATE NATIONAL AMBIENT AIR QUALTIY STANDARDS

Pollutant	Averaging Time	California Standards[1]		National Standards[2]	
		Concentration	Attainment Status	Concentration[3]	Attainment Status
Ozone	8 Hour	0.070 ppm (137µg/m^3)	N[9]	0.075 ppm	N[4]
	1 Hour	0.09 ppm (180 µg/m^3)	N		[5]
Carbon Monoxide	8 Hour	9.0 ppm (10 mg/m^3)	A	9 ppm (10 mg/m^3)	A[6]
	1 Hour	20 ppm (23 mg/m^3)	A	35 ppm (40 mg/m^3)	A
Nitrogen Dioxide	1 Hour	0.18 ppm (338 µg/m^3)	A	100 ppb (188 µg/m^3)	
	Annual Arithmetic Mean	0.030 ppm (56 µg/m^3)		0.053 ppm (100 µg/m^3)	A
Sulfur Dioxide	24 Hour	0.04 ppm (105 µg/m^3)	A	0.14 ppm (365 µg/m^3)	A
	1 Hour	0.25 ppm (655 µg/m^3)	A	75 ppb (196 µg/m^3)	
Particulate Matter (PM10)	Annual Arithmetic Mean	20 µg/m^3	N[7]		
	24 Hour	50 µg/m^3	N	150 µg/m^3	U
Particulate Matter - Fine (PM2.5)	Annual Arithmetic Mean	12 µg/m^3	N[7]	15 µg/m^3	A
	24 Hour			35 µg/m^3 See Footnote 10	N
Sulfates	24 Hour	25 µg/m^3	A		
Lead	Calendar Quarter			1.5 µg/m^3	A
	30 Day Average	1.5 µg/m^3	A		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	U		
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm (26 µg/m^3)	No information available		
Visibility Reducing particles	8 Hour(1000 to1800 PST)	See Footnote 8	U		

A=Attainment N=Nonattainment U=Unclassified

mg/m^3=milligrams per cubic meter ppm=parts per million µg/m^3=micrograms per cubic meter

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM10, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM10 annual standard), then some measurements may be excluded. In particular, measurements are excluded that ARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.

2. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.08 ppm or less. The 24-hour PM10 standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m3. The 24-hour PM2.5 standard is attained when the 3-year average of 98th percentiles is less than 65 µg/m3.

TABLE 2-1. STATE NATIONAL AMBIENT AIR QUALTIY STANDARDS

Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM10 is met if the 3-year average falls below the standard at every site. The annual PM2.5 standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

3. National air quality standards are set at levels determined to be protective of public health with an adequate margin of safety.

4. In June 2004, the Bay Area was designated as a marginal nonattainment area of the national 8-hour ozone standard.

5. The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.

6. In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.

7. In June 2002, CARB established new annual standards for PM2.5 and PM10.

8. Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

9. The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.

10. U.S EPA lowered the 24-hour PM2.5 standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ in 2006. EPA is required to designate the attainment status of BAAQMD for the new standard by December of 2009.

3 EMISSIONS CALCULATIONS

As previously discussed, all current activities at the TCRDF were included in the certified 2007 EIR for TCRDF; therefore, only emissions from new uses are included in this report. The new uses addressed in this AQIA are the Medical Waste Facility (MWF), the Retails Landscape Products Sales Center (Retail Center), and the painting operation associated with the approved Waste Collection Cart and Steel Bin Storage, Painting, and Repair activity (Paint Booth). MWF emission sources are the MWF building, the boiler which provides steam for the MWF autoclaves, and both employee vehicles and haul vehicles. Retail Center emission sources are the Sales building and both employee and haul vehicles. No construction or vehicle emissions are associated with the Paint Booth.

MOBILE EQUIPMENT

There is no new mobile on-site equipment and no expanded use of any existing mobile on-site equipment associated with the Project; therefore on-site mobile source emissions are not addressed in this report. Vehicle emissions associated with employee transport, medical waste transport, and products sold at the Retail Center were included in modeling.

TAC EMISSIONS MODELING

Per the City of Fremont, quantitative analysis of community risk is not required as part of this AQIA; therefore calculation of emissions of TACs associated with the Project is not included in this report.

LAND USE AND CONSTRUCTION EMISSIONS MODELING

URBEMIS2007 (URBEMIS), an emission model developed by CARB, and the BAAQMD GHG Model (BGM) were used to calculate CAP and GHG emissions from the MWF and Retail Center. URBEMIS output tables are provided as **Appendix E**. BGM output tables are provided as **Appendix F**.

Both uses were considered light industrial use within URBEMIS. For construction emissions, the MWF was assumed to include a new 26,300 square foot (sf) building with an operational footprint of approximately four acres, and the Retail Center was assumed to include a new 400 square foot outbuilding.

For land use emissions, as a conservative approach, MWF operation was assumed to result in the highest estimated number of trips within the ranges described in the Project Description. This includes trips associated with 50 employees (151 daily trips as determined by the City), 25

incoming waste vehicles, and 15 outgoing waste vehicles. Haul traffic trips were assumed to be primary trips and not diverted or pass-by trips.

Construction of the MWF was assumed to occur on the schedule shown below. The construction schedule is summarized in ***Table 3-1***.

Table 3-1 – Construction Schedule

Phase	Start Day	End Day
Fine Site Grading	1	43
Paving	29	43
Building Construction	43	267
Architecture Coating	74	281

CAP EMISSIONS

In addition to CAP estimated in the URBEMIS model, CAP emissions from the MWF boiler combustion, the Paint Booth, and vehicle dust were estimated. As a conservative approach, the MWF was assumed to operate continuously throughout the year at full capacity, and the highest number of vehicle trips was assumed. Note that the terms VOC and ROG are assumed to be equivalent in this AQIA.

Boiler combustion emissions were calculated using the maximum boiler rating of 12.6 million BTUs per hour (MMBtu/hr) and emission factors and methodologies from Section 1.4 of AP-42 guidance. Boiler combustion emissions calculations are presented in ***Table 3-2***.

Table 3-2 – Boiler Emissions

Pollutant	Emission Factor (lb/MMBtu)	Maximum Emissions from Dryer (lb/day)	Maximum Emissions from Dryer (tons/yr)[1]
Volatile Organic Compounds (VOCs)[2]	0.0054	1.63	0.30
Nitrogen Oxides (NO_X)[3]	0.049	14.8	2.70
Carbon Monoxide (CO)[3]	0.082	24.8	4.53
Sulfur Oxides (SO_2)[2]	0.0006	0.18	0.03
Particulate Matter (PM_{10})[2]	0.0075	2.27	0.41

(1) Heat input rating provided by WM.

(2) VOC, SO2 and PM10 emission factors are from Table 1.4-2 of AP-42 Natural Gas Combustion.

(3) NOx and CO emission factors are from Table 1.4-1 of AP-42 Natural Gas Combustion. Assumes low-NOx burner w/o flue gas recirculation. Assumes conventional boiler (not "Tangential-fired" boiler).

The Paint Booth is subject to BAAQMD permitting requirements per District Regulation 8, Rule 4, which specifies meeting at least one of the following limits:

- No more than 5 tons per year of VOC emissions
- Abatement system with at least 85% efficiency
- Use coatings with VOC content of no more than 3.5 lb of VOCs per gallon

The painting operation will use a maximum of 200 gallons per month and paint will meet the VOC content limit specified. Maximum uncontrolled emissions will therefore be approximately 4.2 tons per year. While it is expected the painting operation will also include the required abatement system, thus further reducing VOC emissions, WMAC has not provided those details. As a conservative estimate, SCS has assumed the maximum allowed VOC emissions of 5 tons per year (27.4 lb/day), per the District Rule.

Particulate emissions from vehicle dust were calculated using EFs and methodologies from Chapter 13 of the EPA's AP-42 guidance. Vehicle dust emissions calculations are presented in ***Tables 3-3a*** through ***3-3e***, provided at the end of this section.

CAP emissions from construction, area sources, and operations were calculated using site specific land use and trip generation counts in URBEMIS. URBEMIs-calculated CAP emissions are shown in ***Table 3-4***. URBEMIS calculates exhaust and dust particulate emissions separately for construction emissions. The BAAQMD thresholds of significance are different for construction particulate emissions of dust and exhaust, so they are shown separately. Both dust and exhaust particulate emissions are subsets of regulated particulate matter (PM2.5 and PM10). URBEMIS and BAAQMD CEQA guidance does not speciate operational emissions by source. Urbemis output tables are provided as **Appendix E**.

Table 3-4 – URBEMIS-Calculated CAP Emissions

Emission Source	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
Operational Vehicle Emissions (lb/day)	2.44	4.39	30.22	0.02	NA	NA	0.26	NA	NA	0.16
Operational Area Source Emissions (lb/day)	0.69	0.83	2.23	0.00	NA	NA	0.01	NA	NA	0.01
Construction Emissions (lb/day)	15.69	33.37	21.41	0.02	20.02	2.01	22.03	4.18	1.85	6.03

CAP EMISSIONS SUMMARY

Table 3-5 shows a summary of all CAP emissions for both operations and construction, including stationary and mobile sources.

Table 3-5 – Project CAP Emissions

Emission Source	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
Operational Vehicle Emissions (lb/day)	2.44	4.39	30.22	0.02	NA	NA	0.26	NA	NA	0.16
Operational Area Source Emissions (lb/day)	0.69	0.83	2.23	0.00	NA	NA	0.01	NA	NA	0.01
Boiler Emissions (lb/day)	1.63	14.8	24.8	0.18	2.27	NA	2.27	2.27	NA	2.27
Paint Booth (lb/day)	27.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
Road Dust (lb/day)	NA	NA	NA	NA	4.0	NA	4.0	0.13	NA	0.13
Total Project Emissions (lb/day)	**31.42**	**18.7**	**47.64**	**0.20**	**4.0**	**NA**	**6.46**	**0.13**	**NA**	**2.52**
Construction Emissions (lb/day, unmitigated)	15.69	33.37	21.41	0.02	20.02	2.01	22.03	4.18	1.85	6.03

NA = not applicable

GREENHOUSE GAS EMISSIONS

GHG emissions from operations were calculated using URBEMIS and BGM, the model developed by the BAAQMD to calculate project GHG emissions. BMG output tables are provided as **Appendix F**. GHG emissions from the boiler were calculated using EFs and methodologies from Section 1.4 of AP-42 guidance for natural gas boilers. GHG emissions from emissions sources included in BGM and GHG emissions from the boiler are shown in ***Table 3-6***. Total GHG emissions from the project are 6,736 metric tons of carbon dioxide equivalents ($MTCO_2e$), which is below the BAAQMD threshold of significance. The primary source of GHG emissions is the combustion of natural gas in the boiler.

Table 3-6 – Project Operational GHG Emissions

Emission Source	MTCO2e/year
Operational (Vehicle) Emissions (unmitigated)	462
Electricity	245
Natural Gas (non-boiler use)	20
Water and Wastewater	3
Solid Waste	62
Total non-Stationary Source Emissions	**792**
Boiler Emissions	5,944
Total Stationary Source Emissions	**5,944**
Total Project GHG Emissions	**6,736**

In addition to these operational GHG emissions, peak GHG emissions from construction are 3,629 pounds per day, resulting from the use of fossil fuel in construction equipment.

SECTION 3. INDEX OF TABLES

Tables 3-3a through 3-3e are provided at the end of the section, beginning on the following page, all other tables are provided within the section text.

TABLE 3. PARTICULATE EMISSIONS FROM PROJECT VEHICLE TRAVEL ON PAVED ROADS
TRICITES RESOURCES RECOVERY FACILITIES - FREMONT, CA

based on AP-42 Chapter 13.2.1, last updated 11/06

Equation 1: $E = k\,(sL/2)^{0.65}\,(W/3)^{1.5} - C$

where E = size specific emission factor, pounds/vehicle mile traveled (lbs/VMT)
k = base emission factor for particle size range (lbs/VMT), from Table 13.2.1-1
sL = road surface silt loading (g/m^2), default from Table 13.2.1-4 = 7.4 g/m^2 for MSW Landfills
W = mean vehicle weight of entire fleet traveling the road (tons)
C = emission factor for vehicle fleet exhaust, brake wear, and tire wear (lbs/VMT) from Table 13.2.1-2.

Notes:
Use the tables below to fill in site specific data. Values in bold text are constants and should not be changed.
For Table 1., values in red text are default values that should be replaced with site specific data if available.
For Tables 2. & 3., values in red are examples of data used for one particular site and should be replaced with site specific data.
For all tables, values in regular text are calculated values. These equations should not be changed.
AP-42 indicates that site specific sL values should be used when mitigation measures (sweeping and watering) are employed.
Lacking any site specific data, mitigation measures are assumed to reduce uncontrolled particulate emissions by 50%.

Table 3A. Variables for Equations 1.

	PM-2.5	PM-10	PM-30
k	0.0024	0.016	0.082
sL	7.40	7.40	7.40
W	5.84	5.84	5.84
C	0.00036	0.00047	0.00047

Inputs
Red Type indicates model inputs
Other values are calculated

Table 3B. Mean Vehicle Fleet Weight (Paved Roads, Vehicle Fleet Includes All Project Off-Site Vehicle Traffic)

Vehicle Type	Empty Wt pounds	Load Wt pounds	Full Wt pounds	Avg. Wt tons	Max Round Trips/Day	Daily wt*trips
Medical Waste (MW)						
Inbound 10 yd3 truck	22,920	6,000	28,920	12.96	25	324
Outbound 10 yd3 truck	22,920	10,000	32,920	13.96	15	209
Retail Sales						
pick up truck	3,200	333	3,533	1.68	30	50
10 yd3 truck	22,920	6,000	28,920	12.96	20	259
Employees						
Employee vehicle*	3,200	150	3,350	1.64	75.5	124
TOTALS					166	967
Mean Fleet Weight (W) in tons				5.84		

* Employee daily trip count of 151 one-way trips provided to SCS by City (based on 52 employees and calculated by City using methodology in ITE, 8th Edition Trip Generation Handbook.

TABLE 3. PARTICULATE EMISSIONS FROM PROJECT VEHICLE TRAVEL ON PAVED ROADS
TRICITES RESOURCES RECOVERY FACILITIES - FREMONT, CA

Table 3C. Maximum Vehicle Miles Traveled by Fleet on Paved Roads

	Med Waste	Retail Sales	Employees	Project Total	Units
Paved Length Round Trip (ft)	2,250	2,600	2,600	NA	feet (one way)
Max Daily Round Trips	40	50	76	165.5	trips/day
Avg Operating Time (days/yr)	365	365	365	NA	days/year
Max Annual Round Trips	14,600	18,250	27,558	60,408	trips/year
VMT/Day	17	25	37	78.8	miles/day
VMT/Year	6,222	8,987	13,570	28,778	miles/year

Table 3D. Suggested Control Efficiency

Mitigation Measure	PM-2.5	PM-10	PM-30
Site-Specific Rainfall	**4%**	**4%**	**4%**
Sweeping and/or Watering	**50%**	**50%**	**50%**

Table 3E. Paved Road Emissions

	Emission Factor (Pounds/VMT)		
	PM-2.5	PM-10	PM-30
Uncontrolled	0.015	0.101	0.521
With Natural Rainfall Only	0.014	0.097	0.500
After Sweeping/Washing	0.007	**0.051**	0.260
	Daily Emissions (Pounds/Day)		
	PM-2.5	PM-10	PM-30
Uncontrolled	0.25	7.99	8.88
With Natural Rainfall Only	0.24	7.66	8.52
After Sweeping/Watering	0.13	**3.99**	4.44
	Annual Emissions (Tons/Year)		
	PM-2.5	PM-10	PM-30
Uncontrolled	0.214	1.457	7.497
Natural Rainfall Mitigation	0.206	1.397	7.189
After Sweeping/Watering	0.107	**0.729**	3.748

Note: For Project emissions, PM10 emissions after controls (indicated in bold type in Table 3E) are used.

4 PROJECT IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

The BAAQMD uses the "Thresholds of Significance" requirements contained within its CEQA guidelines as a basis to establish air quality significance criteria for the SFBAAB. According to the guidelines, a project may be deemed to have a significant adverse impact on the environment if it would "violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations."

A project would also have a significant impact to air quality if it would conflict with adopted environmental plans or goals of the community where it is located, or "create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the area affected. The state CEQA Guidelines also indicate that a project could have a significant air quality impact if it would result in either "the creation of objectionable odors", or "alternation of air movement, moisture, or temperature, or any change in climate, either locally or regionally."

Criteria Air Pollutant Standard

Based on the BAAQMD's CEQA guidelines, operational impacts from a proposed project are considered significant under CEQA if the project resulted in the following:

- 10 tons per year (54 lbs/day) of ROG (assumed equivalent to VOC).
- 10 tons per year (54 lbs/day) of NOx.
- 15 tons per year (82 lbs/day) of PM10.
- 10 tons per year (54 lbs/day) of PM2.5.
- Ground level concentrations of CO over 20 parts per million (ppm) averaged over 1 hour or over 9 ppm averaged over 8 hours.
- 10,000 metric tons per year of GHG for stationary sources.
- 1,100 metric tons per year of GHG for other sources.
- TAC emissions resulting in an increase in cancer risk of 10 in a million.

Please note there is no threshold of significance for sulfur oxides (SOx) in the BAAQMD's CEQA guidelines. In the BAAQMD's New Source Review (NSR) rule (Rule 2-2) there is a major modification threshold for SO2 of 40 tpy and a prevention of significant deterioration (PSD) threshold of 250 tpy, neither of which is exceeded by this Project. SOx emissions would not be considered significant by either of these thresholds.

Project emissions and the BAAQMD thresholds of significance for CAPs are shown in ***Table 4-1***. Increased CAP emissions from the Project do not exceed the BAAQMD's threshold of significance for ROG, NOx, PM10, or PM2.5. The BAAQMD thresholds for CO and TACs are local impact thresholds. Due to the distance between the Project and sensitive receptors, CO and TAC impacts are assumed to not be significant.

Table 4-1 – Project CAP Emissions and Thresholds of Significance

Emission Source	ROG	NOx	CO	SO2	PM10 Dust**	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
Operational Vehicle Emissions (lb/day)	2.44	4.39	30.22	0.02	NA	NA	0.26	NA	NA	0.16
Operational Area Source Emissions (lb/day)	0.69	0.83	2.23	0	NA	NA	0.01	NA	NA	0.01
Boiler Emissions (lb/day)	1.63	14.8	24.8	0.18	NA	NA	2.27	NA	NA	2.27
Paint Booth (lb/day)	27.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
Road Dust (lb/day)	NA	NA	NA	NA	4.0	NA	4.0	0.13	NA	0.13
Total Project Emissions (lb/day)	32.16	20.02	57.25	0.2	4	0	6.54	0.13	0	2.57
BAAQMD Threshold of Significance (lb/day)	**54**	**54**	**none***	**none**	**none**	**none**	**82**	**none**	**none**	**54**
Construction Emissions (lb/day, unmitigated)	15.69	33.37	21.41	0.02	20.02	2.01	22.03	4.18	1.85	6.03
BAAQMD Threshold of Significance (lb/day)	**54**	**54**	**none**	**none**	**none**	**82**	**none**	**none**	**54**	**none**

*BAAQMD CO threshold is based on resulting local CO concentration. The Project is located sufficiently far from receptors that local impacts are not considered and BAAQMD CEQA guidance only calls for CO modeling when traffic impacts have the potential to create CO hotspots.

NA = not applicable

** PM2.5 and PM10 vehicle road dust emissions, per Table 3-3e, represent controlled emissions.

There are no Project or Construction CAP emissions that exceed the BAAQMD's thresholds of significance.

Greenhouse Gas Standard

The BAAQMD threshold of significance for GHG emissions for stationary sources is 10,000 metric tons (11,023 short tons) of GHG per year. The stationary combustion emissions are 6,552 MTCO2e, well below the BAAQMD threshold for stationary sources. The BAAQMD threshold for non-stationary sources is 1,100 MTCO2e per year (1,213 short tons of carbon dioxide equivalent per year). Non-stationary GHG emissions from the Project are 441 MTCO2e per year, which is below the BAAQMD threshold. GHG emissions from non-stationary and

stationary emissions, along with their respective BAAQMD CEQA thresholds of significance are shown in ***Table 4-2***.

Construction GHG emissions are 3,629 pounds per day, but the BAAQMD does not have a threshold of significance for GHG resulting from construction.

Table 4-2 – Project GHG Emissions and Thresholds of Significance

Emission Source	MTCO2e/year
Operational (Vehicle) Emissions	462
Electricity	245
Natural Gas (non-boiler use)	20
Water and Wastewater	3
Solid Waste	62
Total Operational non-Stationary GHG	**792**
BAAQMD Threshold of Significance for non-Stationary Project Emissions	**1,100**
Boiler GHG Emissions	**5,944**
BAAQMD Threshold of Significance for Stationary Project Emissions	**10,000**

GHG impacts from the Project are less than significant.

PROJECT SCENARIO IMPACTS

All Project emissions impacts are less than significant.

MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

There are no significant impacts associated with any Project emissions; therefore, no mitigation measures are required.

CUMULATIVE IMPACTS

BAAQMD CEQA guidance indicates that any project that does not have significant operational impacts on air quality can be considered to be less than significant for cumulative impacts for CAP and GHG. Project air quality impacts from CAPs and GHG are less than significant; therefore, cumulative impacts of CAP and GHG are less than significant.

SECTION 4. INDEX OF TABLES

5 REFERENCES

BAAQMD, 2010. *CEQA Air Quality Guidelines,* June 2010.

BAAQMD 2010. *Greenhouse Gas Model User's Manual.*

City of Fremont, 2007. *Draft Environmental Impact Report – Tri-Cities Recycling and Disposal Facility Landfill Closure and Land Use Plan*, May 2007.

City of Fremont, 2011. *Task Order – Acoustical and Air Impact Studies (PLN2011-00100).*

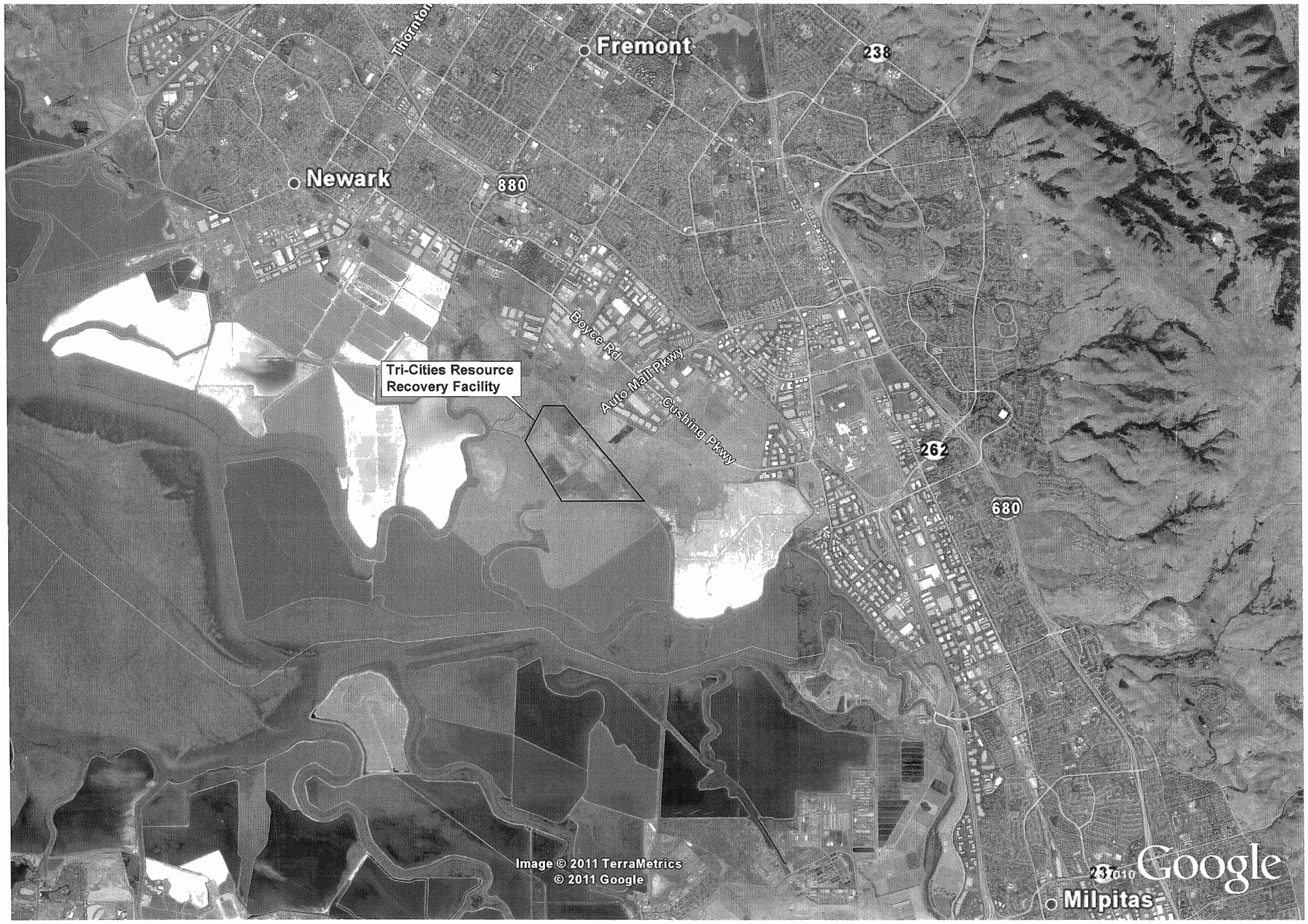
Illingworth & Rodkin, Inc., 2011. *Letter to Waste Management of Alameda County, Inc.,* May 12, 2011.

South Coast Air Quality Management District 2007. *Software User's Guide: URBEMIS2007 for Windows.*

USEPA, 2010. *Compilation of Air Pollutant Emission Factors (AP-42).*

FIGURES

INDEX OF FIGURES



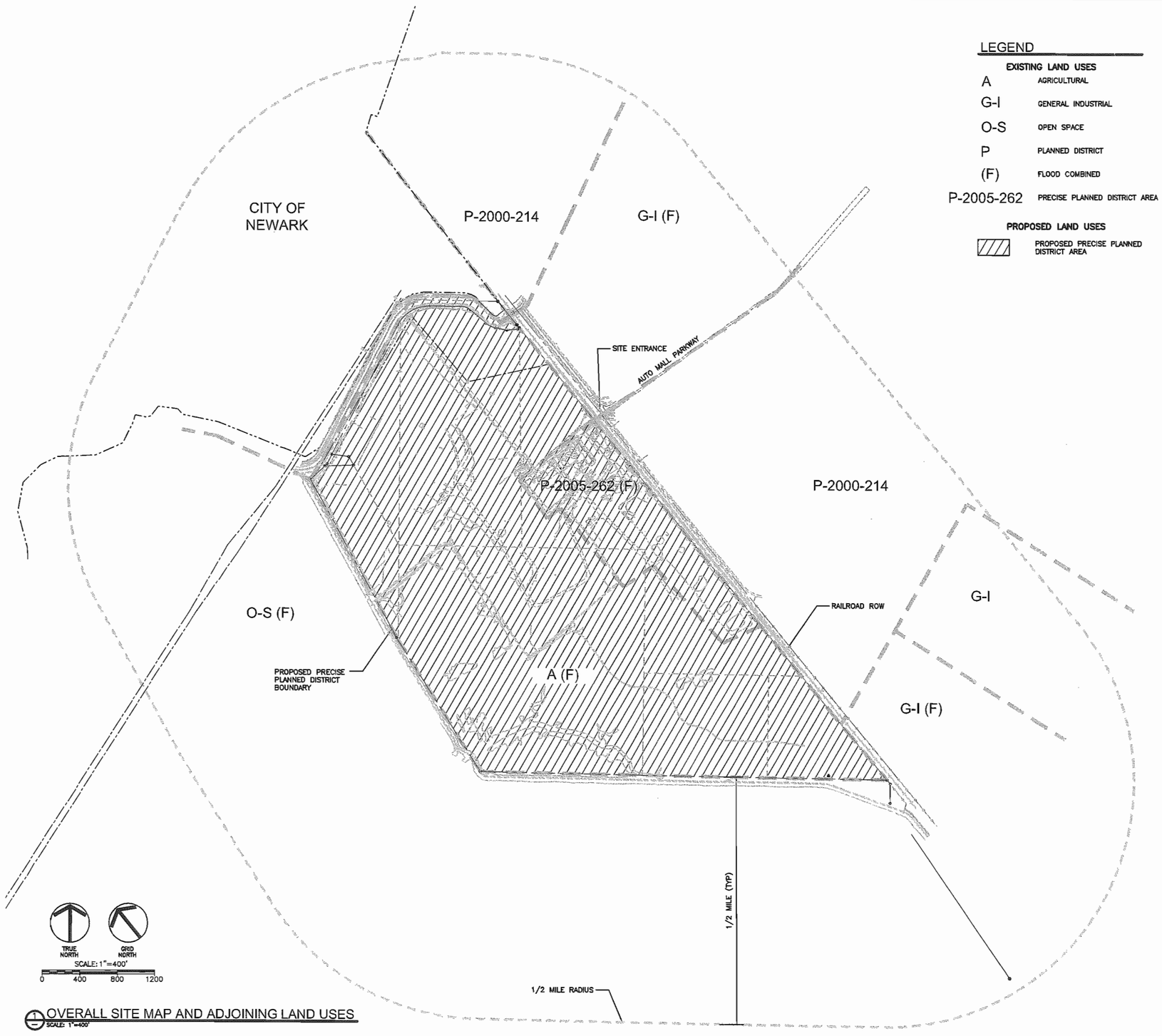
North

0 0.5 1
Approximate scale in miles

FIGURE 1
Site Vicinity Map
Tri-Cities Resource Recovery Facility
Fremont, California

CH2MHILL

ES1102091528425AC Figure_1.ai 03.23.2011 tdaus



LEGEND

EXISTING LAND USES

A	AGRICULTURAL
G-I	GENERAL INDUSTRIAL
O-S	OPEN SPACE
P	PLANNED DISTRICT
(F)	FLOOD COMBINED
P-2005-262	PRECISE PLANNED DISTRICT AREA

PROPOSED LAND USES

PROPOSED PRECISE PLANNED DISTRICT AREA

1 OVERALL SITE MAP AND ADJOINING LAND USES
SCALE: 1"=400'

ET
Easier · Solutions · Future

CONSULTANT:

SEAL:

CLIENT:
WM
WASTE MANAGEMENT

OVERALL SITE MAP AND ADJOINING LAND USES

TRI-CITIES RESOURCE RECOVERY FACILITY
PRECISE PLANNED DISTRICT APPLICATION
7010 AUTO MALL PARKWAY - FREMONT, CA 94538
APNs 537-801-3-4, 537-801-3-3 & 537-801-2-3

REVISIONS:

SET ISSUE:	DATE:
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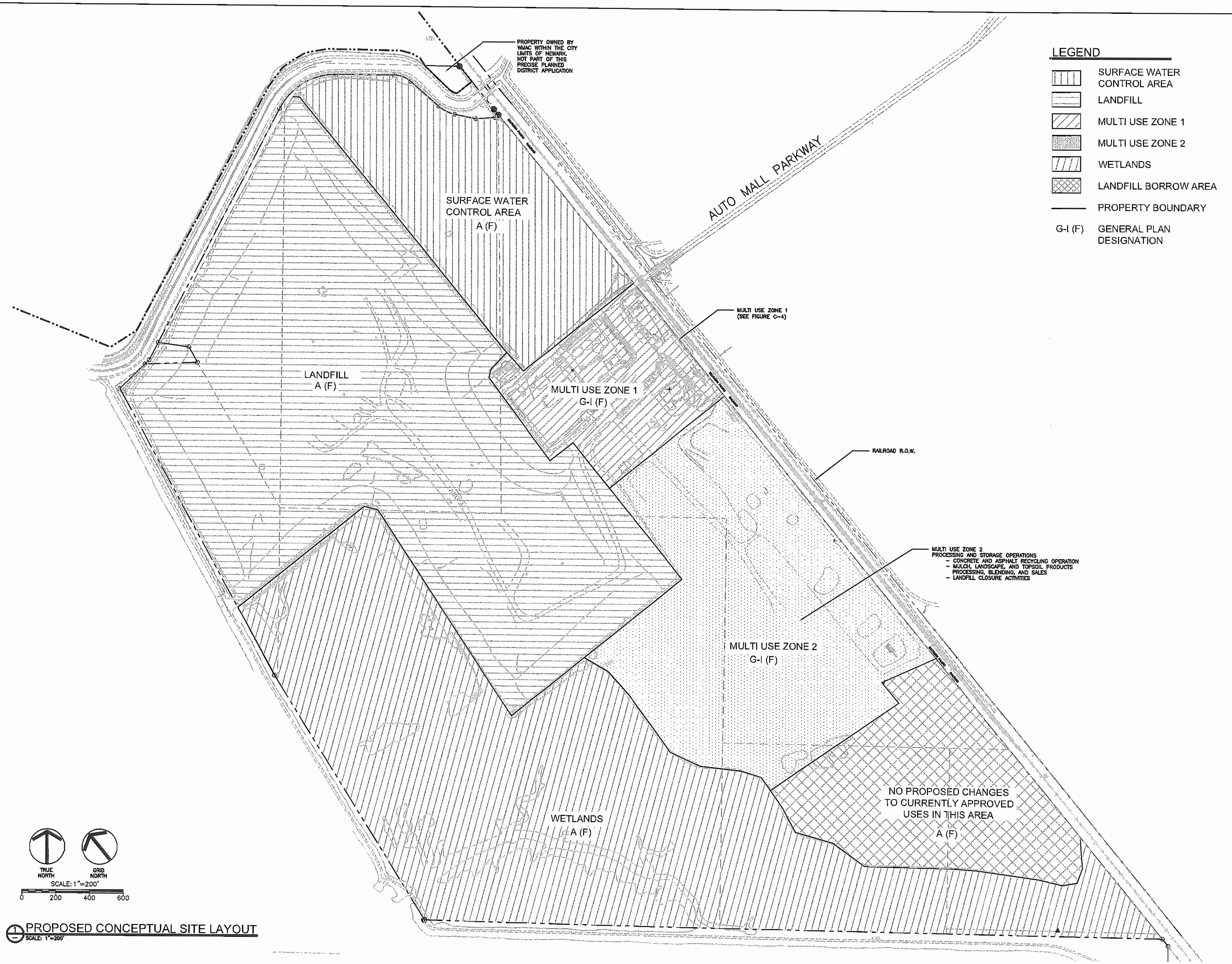
DATE: 6/30/11

PROJECT #:	02-ET1099
DRAWN BY:	CD
CHECKED BY:	CD
APPROVED BY:	BW
FILENAME:	SitePlan-C1.dwg

C-1



1 PROPOSED CONCEPTUAL SITE LAYOUT
SCALE: 1"=200'

Values · Solutions · Value

CONSULTANT:

SEAL:

CLIENT:

WASTE MANAGEMENT

PROPOSED LAND USES AND DESIGNATIONS

TRI-CITIES RESOURCE RECOVERY FACILITY

PRECISE PLANNED DISTRICT APPLICATION

7010 AUTO MALL PARKWAY - FREMONT, CA 94538

APNs 537-801-3-4, 537-801-3-3 & 537-801-2-3

REVISIONS:

SET ISSUE:		DATE:
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DATE: 6/30/11

PROJECT #:	02-ET1099
DRAWN BY:	CD
CHECKED BY:	CD
APPROVED BY:	BW
FILENAME:	Site Plan C-3.dwg

C-3

LEGEND

- PROPOSED PAVEMENT
- PROPOSED FIRE LINE & HYDRANT
- PROPOSED FENCE/GATE
- PROPOSED BUILDING

TRUE NORTH / GRID NORTH

SCALE: 1"=50'

0 50 100 150

CONCEPTUAL NORTH AREA SITE PLAN

SCALE: 1"=50'

(E) SANITARY PUMP STATION AND COMPRESSOR BUILDING AREA

MULTI USE ZONE 1 BOUNDARY

RAILROAD R.O.W.

SITE ENTRANCE

NOTE: SEE ENLARGED PLAN C4.1

PROPOSED FIRE LANE SEE SHEET C-4.1 FOR CONTINUATION OF FIRE LANE TO PUBLIC ROW.

EQUIPMENT MAINTENANCE BUILDING OPERATIONS INCLUDE BIN PAINTING AND REPAIR

MAINTENANCE STAFF PARKING. ACCESS RESTRICTED TO EMPLOYEES ONLY.

ACCESSIBLE PATH OF TRAVEL FROM PARKING TO MODULAR STRUCTURES. THESE BLDGS ARE RESTRICTED FROM GENERAL PUBLIC ACCESS.

RELOCATED MODULAR STRUCTURES FROM MED. WASTE DEVELOPMENT AREA

PROPOSED WASTE MANAGEMENT RENEWABLE ENERGY FACILITY PER SEPARATE PERMIT

(E) LANDFILL

MEDICAL WASTE FACILITY

(E) EQUIPT. MAINTENANCE BLDG.

(E) OPERATIONS BLDG.

(E) STORAGE BLDG.

RETAIL LANDSCAPE PRODUCTS SALES AREA

CONCEPTUAL STORAGE BUNKERS

STORAGE & STAGING AREA

TRAILER STORAGE & STAGING AREA

SCALES & GATEHOUSE

COLORED MATERIAL RELOADING & SALES

MATERIAL COLORING AREA

MULCH PROCESSING AREA

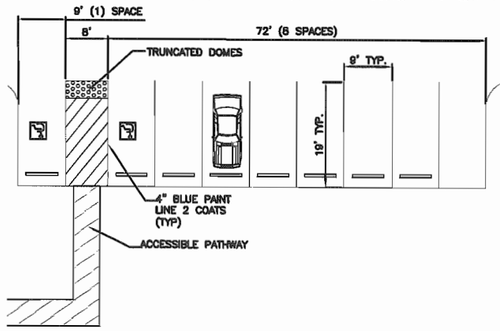
MOBILE PROCESSING EQUIPMENT, TYPE AND LOCATION MAY CHANGE BASED ON OPERATIONAL NEEDS

LANDSCAPE BULK SALES AREA

PRODUCT STOCKPILES & BUNKERS ARE SHOWN FOR CONTEXT ONLY. SIZE, PROPORTION, AND LOCATION MAY VARY BASED ON OPERATIONAL REQUIREMENTS

SOUTHERN PACIFIC RAILROAD

MATCHLINE SEE SHEET C-5



2 TYPICAL ADA/STANDARD PARKING LAYOUT

SCALE: 1"=10'

ET

CONSULTANT:

SEAL:

CLIENT:

WM WASTE MANAGEMENT

CONCEPTUAL NORTH AREA SITE PLAN

TRI-CITIES RESOURCE RECOVERY FACILITY

PRECISE PLANNED DISTRICT APPLICATION

7010 AUTO MALL PARKWAY - FREMONT, CA 94538

APNs 537-801-3-4, 537-801-3-3 & 537-801-2-3

REVISIONS:

SET ISSUE:	DATE:

DATE: 6/30/11

PROJECT #:	02-ET1099
DRAWN BY:	CD
CHECKED BY:	CD
APPROVED BY:	BW
FILENAME:	Site Plan C-4.dwg

C-4

APPENDICES

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APPENDIX A

TCRRF Precise Planned District Project Description and Justification Statement, dated March 2011 (prepared by CH2MHILL)

REVISED

Tri-Cities Resource Recovery Facility Precise Planned District Project Description and Justification Statement

Prepared for

Waste Management of Alameda County, Inc.

172 98th Avenue
Oakland, CA 94603

March 2011

CH2MHILL
2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833

Contents

SECTION 1

Project Description

1.1 Introduction

Waste Management of Alameda County, Inc. (WMAC) is proposing development of the Tri-Cities Resource Recovery Facility (TCRRF) at the site of the existing Class III Tri-Cities Recycling and Disposal Facility in Fremont, Alameda County, California. The TCRRF is envisioned as the next generation of recycling and recovery operations, continuing WMAC's commitment to waste reduction and beneficial reuse of materials. The TCRRF represents WMAC's proposed new master plan for the site as the permitted Class III landfill operations cease and transition into closure and post-closure status.

The proposed TCRRF will include the following new and continued uses:

- New Uses:
    - Biomedical waste acceptance, treatment, recycling and transfer facility owned and operated by Waste Management Healthcare Solutions, Inc.
    - Top soil blends, and planting mix processing, blending, and sales.
    - Retail landscape products sales center.
- Continued Uses
    - Concrete/asphalt acceptance and recycling operation.
    - Mulch and landscape products processing, blending, and sales.
    - Maintenance facility to support concrete recycling, energy production, and landscape products processing operations.
    - Waste collection cart and steel bin storage, painting and repair.
    - Landfill closure and post-closure monitoring and maintenance activities as required by the landfill closure permit.
    - Landfill gas collection, conveyance, and destruction at a flare and/or electrical energy generation facility.

Please note that the landfill closure/post-closure activities and the gas to energy facility do not require further entitlement approval. However, we have included them to ensure that the new master plan for the property reflects the full scope of activities planned on the site.

The proposed TCRRF supports the overall resource recovery mission of WMAC to divert, recover and recycle consistent with state and local policies. It also fulfills the requirement that WMAC develop a final site re-use master plan by 2015.

1.2 Site Information

The Tri-Cities Resource Recovery Facility (TCRRF) is located at the western edge of the City of Fremont, within the city boundaries, in southwestern Alameda County, at the southeastern end of San Francisco Bay (Plan Set, Sheet T-1). The site has been in use as a municipal solid waste disposal facility since 1967 and is currently a Class III recycling and disposal facility operating under permits issued to WMAC. The current facility primarily receives waste from Fremont, Newark, and Union City. The landfill is slated to reach capacity and cease waste acceptance in 2011 or 2012 and the landfill is anticipated to be capped and placed into closure by 2015.

The project site is comprised of three legal lots (Assessor Parcel Numbers: 537-0801-003-04, 537-0801-003-03, and 537-0801-002-03) and encompasses 378 acres. The proposed TCRRF development will be focused on approximately 81 acres of already disturbed area in the center of the site, shown as "Multiuse Zone 1" and "Multiuse Zone 2" in Sheet C-3 of the Plan Set. The existing 115 acre Fill Area 1 landfill at the northwest, the wetlands area at the southwest, the surface water control area at the northern ends of the site, and the currently undisturbed closure borrow area portion of the south area are outside of the planned active TCRRF operations area.

The project site is located at 7010 Auto Mall Parkway in Fremont, California. Site access is by Interstate (I)-880 and Auto Mall Parkway. All vehicles will enter and exit the facility through the entrance gate at the western terminus of Auto Mall Parkway and the paved, two-lane entrance road. Deliveries of incoming material for processing, with the exception of waste material handled through the biomedical waste facility, will be routed through the scales along a designated access road, as will trucks hauling purchased bulk finished product. Private vehicles making retail purchases will not pass through the scale and instead will be directed to use the access road that runs along the northern border of the site. Please see Sheet C-4 of the Plan Set, Proposed Enlarged North Area Site Plan, for a schematic of traffic flow on site. Traffic for the medical waste facility and maintenance/operations buildings will also use this northern access road. This traffic plan will keep the scale lanes clear for efficient truck admittance to the facility and limit the interaction of private vehicles with commercial haulers. In addition, appropriate traffic controls will be installed along the main access road to ensure safe interaction between trucks and private vehicles.

Lands immediately west and south of the project site have been acquired by the San Francisco Bay Wildlife Refuge and are currently being used for salt production by pond evaporation. A Pacific Gas & Electric (PG&E) substation is located to the north of the project site. Additionally, some of the land north and east of the site is being used to grow hay and for grazing by a small number of horses and cattle.

The Catellus Pacific Commons Project is located on the south side of Auto Mall Parkway, west of I-880 and east of the TCRRF entrance. At its closest point, the Catellus site is located approximately one-quarter mile northeast of the project site. The Catellus site is approximately 738 acres of which 433 acres remains as wetlands and open space. The remainder of the Catellus site is developed with commercial, retail and industrial uses. In 2001 the City of Fremont purchased an approximately 40-acre parcel once part of the

Catellus project at its western edge, adjacent to the railroad right-of-way at the eastern boundary of the project site. The City owned parcel has been considered for a potential City park, flood control facility and transit center. However, no specific development plan has been approved for the parcel as of this writing.

Finally, a railroad line runs along the eastern edge of the project site and is located between the City owned parcel and the TCRRF site. The rail line currently serves both commuter and freight trains. The railroad easement does not impinge on the TCRRF property. The City of Fremont is reviewing the railroad easement as a possible addition to the Bay Trails network of public hiking trails.

1.3 Past Entitlement Approvals

In 2000 the Tri-Cities Recycling and Disposal Facility (TCRDF) received a Conditional Use Permit (CUP) for continued operation of the landfill facility and related corporate yard and recycling activities.

In 2007 the City of Fremont approved a General Plan amendment and rezoning along with a CUP amendment to the 2000 TCRDF CUP approval to allow permanent closure of the landfill site along with a small number of continued industrial uses on site. The "Tri-Cities Landfill Closure and Land Use Plan" project included:

1. Installation of a final cover over the active landfill and associated environmental monitoring and maintenance of the 115-acre landfill for the Post-Closure Period anticipated at about 30 years in duration.

2. Excavation and conditioning of soil materials from an 88-acre borrow area within the 225-acre TCRDF permitted solid waste facility boundary (per the Solid Waste Facility Permit issued by the Alameda County Environmental Health Department).

3. Alternative import of off-site borrow soils for landfill cover.

4. Continued operation of the Corporation Yard and concrete recycling facility on up to 46 acres of the site (TCRDF Closure DEIR, pg. iv).

The City of Fremont's objectives for the proposed General Plan and zoning changes in 2007 include allowing for the continuation of existing uses on the site to the extent they are deemed compatible with future adjacent uses while encouraging resource recovery and diversion activities, ongoing maintenance and supervision of the landfill closure, maintaining the integrity of the site for future appropriate industrial uses within known access, utility, and natural environment constraints (TCRDF Closure EIR, pg. xvi).

1.4 Proposed Zoning and General Plan Designation Changes

The TCRRF site is currently zoned A(F) (Agricultural with a Flood zone overlay) with a portion zoned P-2005-00262 (Planned District) through an earlier Planned District approval for the concrete crushing operation area owned and operated by Raisch, later taken over by

WMAC in 2010. The proposed TCRRF would create a new Planned District zone for the entire site. The TCRRF site currently has a General Plan designation of A (Agricultural) with the existing Planned District portion designated Light Industrial. The proposed TCRRF would update the 81 acres shown as "Multiuse Zone 1" and Multiuse Zone 2" on Sheet C-3 of the Plan Set to a Light Industrial General Plan designation and the 115-acre landfill, wetland, surface water control area, and the currently undisturbed closure borrow area on the south end of the site will retain its Agricultural General Plan designation. These changes are consistent with the current and proposed uses on the site and compatible with surrounding uses.

1.5 Proposed TCRRF Operations

1.5.1 Biomedical Waste Facility

Waste Management Healthcare Solutions (WMHS) proposes to develop a new biomedical waste acceptance, treatment, recycling and transfer facility (e.g., transfer to off-site permitted disposal sites) in the northeast portion of the TCRRF site, near the front entrance. WMHS sees a need for this service in the community. The biomedical waste facility will be a fully-enclosed building containing up to three autoclaves and it will be used to process medical waste collected from a variety of medical facilities throughout California. The facility will also treat United States of Agriculture (USDA) Animal and Plant Health Inspection Services (APHIS) waste associated with any means of travel conveyance.

Biomedical waste accepted includes the following:

- Cultures and stocks that are infectious to humans, including specimen cultures, cultures and stocks of etiologic agents, wastes from production of biological and serums, discarded live and attenuated vaccines, and laboratory waste that has come into contact with cultures and stocks of etiologic agents or blood specimens. Such waste includes but is not limited to culture dishes, blood specimen tubes, and devices used to transfer, inoculate, and mix cultures.
- Human blood and blood products - discarded waste human blood and blood components, and materials containing free-flowing blood and blood products.
- Sharps waste includes all hypodermic needles, syringes with needles attached, IV tubing with needs attached, scalpel blades, and lancets that have been removed from the original sterile package.
- APHIS international garbage - defined by the federal codes as "all waste material derived in whole or in part from fruits, vegetables, meats, or other plant or animal (including poultry) material, and other refuse of any character whatsoever that has been associated with any such material on board any means of conveyance, and including food scraps, table refuse, galley refuse, food wrappers or packaging materials, and other waste material from stores, food preparation areas, passenger or crew quarters, dining rooms, or any other areas on means of conveyance." Please note that garbage that is commingled with regulated garbage is also considered regulated garbage.

Approximately 92 to 95 percent by volume of the waste is plastic, metal, and paper material and the remainder is liquid.

The following materials will **not** be treated at the medical waste facility, but may be brought to the facility for transfer to incineration:

- Pathological waste.
- Contaminated animal carcasses and other associated waste.
- Trace chemotherapeutic waste (Will only be accepted for transfer).
- Hazardous or radiological wastes (Will **not** be accepted at the facility, even as transfer waste).

The proposed primary area serviced by this operation would include the Bay Area Region including: Alameda, San Francisco, Santa Clara, Contra Costa, San Francisco, Marin and San Mateo counties. Based on operational considerations and waste flow quantities, the facility may accept material from areas other than those listed above.

The plant will operate 24 hours a day, 365 days per year. It is anticipated that the plant will employ approximately 50 workers, comprised of drivers, plant workers, management, and sales and support. Five to six operations and maintenance staff will be on-site during all open hours. Management, support and sales staff will observe normal business hours of 8 am to 5 pm. Delivery times will vary, but the majority will arrive late in the day after a collection route is completed. City water and sewer lines will be brought to the facility in accordance with all applicable regulations. Fire Department access will be maintained around the building, as well as fire hydrants and building fire suppression systems, as required. Storage of medical waste will be in locked trailers, box trucks or within the treatment building protected from animals, rain and wind and will be accessible by authorized personnel only. Medical waste shall be segregated from general office waste by separate containment at the point of origin. In addition, APHIS waste will be segregated from all other waste as per USDA regulations.

Medical waste will be transported to the site in approved vehicles from the various healthcare and medical facilities. Medical waste transportation vehicles will have leak proof fully-enclosed vehicle compartments that are durable and easily cleanable, and will be identified on each side of the vehicle with the name or trademark of "Waste Management." Vehicles will be cleaned frequently to prevent rodent/vector and odor nuisances. All wastewater from vehicle cleaning shall be disposed of in a sanitary sewer system unless otherwise authorized.

APHIS waste will be transported to the site in rigid leak-proof containers with tightly fitted lids. The transport vehicle will be marked "USDA INT'L WASTE" on 3 sides in 4-inch letters, will be capable of being locked and will contain an appropriate spill kit containing APHIS approved disinfectant and/or bleach. Tracking logs and container verification procedures as required by the USDA will be followed.

The biomedical waste processing area is anticipated to be approximately 26,300 square feet with an operational foot print of approximately four acres. The facility is being sized to manage approximately 75 tons per day (tpd) of materials in up to three autoclave units

(approximately 25 tpd per each autoclave). Shipments of waste will be received via small plastic containers shipped in either 3-ton capacity vans or 6-ton capacity trucks. It is anticipated that as the inbound traffic would consist of as many as 25 smaller vehicles or as few as 15 larger vehicles per day. Outbound traffic is estimated to be 8-15 shipments per day of loads containing 5-10 tons each of treated medical waste sent to an offsite permitted and licensed solid waste disposal facility or plastic recycling facility. These traffic estimates do not include employee, contractor or other related vehicle activity at the facility.

The facility will utilize an autoclave, "steam sterilization", by treating all biomedical waste with use of saturated steam within a pressure vessel at temperatures sufficient to kill all microbiological agents in the waste as determined by biological and chemical indicator monitoring requirements. Wastes received at the facility will be transferred into bins that will be treated in the autoclave vessel. This process can be performed by an automated or semi-automated conveying system. The autoclave then goes through a vacuum process, followed by the application of steam at a minimum temperature of 121 °C and 32 psi for approximately 30 minutes, or as defined by regulations, to effectively treat the waste to render it non-infectious and safe for final disposal. APHIS waste will be heated to a minimum internal temperature of 212 degrees Fahrenheit and maintained at that temperature for thirty (30) minutes, or as required by the USDA. A biological indicator of Bacillus stearothermophilus will be used to ensure proper kill.

Venting is performed through a steam condenser resulting in no steam being released into the atmosphere. A post vacuum cycle removes residual steam from the autoclave, flashes residual liquids drying the waste, effectively controlling nuisance odors and insuring a safer environment for the operator and workers in the floor area. Control panels continually record the autoclave temperature, vacuum and pressure. Once the autoclave cycle is complete, the treated medical waste will be unloaded and the waste either is shredded (onsite or offsite) or compacted and placed into solid waste containers and transported to offsite permitted and licensed facilities for solid waste disposal or plastic recycling facility. APHIS waste will not be post-processed except for compaction before being sent for disposal.

1.5.2 Concrete and Asphalt Recycling Operation

WMAC proposes to continue the concrete and asphalt recovery and recycling operations currently on site. The operations include accepting clean concrete and asphalt from demolition and recycling it into products to be used on highways, roadways, parking lots and buildings. While the main operations area will be the same as the current area in the northeast portion of the TCRRF site, WMAC proposes to expand the concrete recycling operations area to include portions of the south field, as needed if dictated by concrete quantities available for recycling. Concrete recycling activities are very mobile in nature and the TCRRF needs this flexibility to ensure that activities may be able to continue unimpeded to accommodate the 'ebb and flow' of incoming materials to be recycled and recycled materials storage awaiting offsite transfer. Certain activities such as concrete crushing and material stockpile may need to move around periodically to allow other activities to occur.

From the TCRRF main entrance, trucks delivering concrete and asphalt will pass through the entrance weigh scales and then enter the concrete recycling operations area. Crushing

will be done by a portable crushing plant, which will be located near the middle of the operations area. The facility will consist of crushing equipment, conveyor belts, and support trailers. To abate dust, loaded trucks are sprayed with water. Water is also sprayed continuously on conveyor belts and on and around stockpile areas during production and periodically during the day to abate dust, except when rain conditions are present. The equipment is fitted with state-of-the-art dust, noise and emissions abatement equipment. Water for the operation comes from a well on-site. An access road will encompass the operations area for site operations and emergency vehicle use.

It is anticipated that the concrete recycling operations could produce up to 150,000 tons per year of aggregate base and other construction products. At peak production, it is anticipated that the concrete recycling operations would generate a maximum of 64 truck trips per day based on recent trends in economic development and construction activity. Operational hours will be Monday through Friday 6:00 am to 5:00 pm. This operation is open to the public. However, it is expected that most of the incoming materials will be transported in larger commercial accounts/vehicles or one-time event business. Bulk sales will generally take place in the operations area where loading will be directly from stockpiled recycled materials. Retail sales of aggregate products to the public will be through the retail landscape products sales center. The primary markets for the aggregate products are contractors and public agencies in Alameda and Santa Clara counties. WMAC views the continued operation of this facility as a positive resource for the region because it provides a local concrete and asphalt recycling opportunity, a reduction in waste, and an essential and necessary service to the community.

1.5.3 Mulch, Landscape, and Topsoil Products Processing, Blending, and Sales

A mulch and landscape products processing, blending, and sales operation is proposed for the TCRRF. The operation is expected to accept on average less than 200 tons per day of clean pre-sorted wood waste and/or compost materials from the Davis Street Transfer Station, Guadalupe Landfill, Redwood Landfill or other sources, on an annual basis. During seasonal peaks, the daily tonnage may peak at 500 tpd. These materials are expected to arrive at the facility in large loads averaging more than 10 tons per load. This will result in a potential for an average of 20 inbound trucks bringing in material, and another 20 trucks leaving with materials each day.

The composted materials accepted will be finished compost product primarily from Redwood Landfill, Inc.'s facility, which is made from curbside collected green and food wastes. This material is used primarily to blend with other wood mulch or soil materials at TCRRF to produce a topsoil product or is transferred through this facility to other locations such as the Guadalupe Landfill for sale at those sites. Composting of green waste materials at this location is neither planned nor proposed for the TCRRF at this time.

Operational hours will be Monday through Saturday 6:00 am to 5:00 pm. It is anticipated that the majority of materials from this operation will be sold to both internal and third-party customers in bulk amounts using large commercial vehicles. However, TCRRF anticipates also selling mulch and other landscape materials directly to the public. After acceptance of the wood and Redwood Landfill's compost materials, the operation will then store, process, blend, colorize, mix, and load the wood material and/ or compost to create various types of mulch products for resale. This includes grinding the wood, screening the

ground wood, colorizing mulch (both 3/8" overs and unders fractions), storage and stockpiling of materials, and blending mulch unders with compost and soil to produce a topsoil mixture. In addition to this activity, it is anticipated the operation will also screen and colorize decorative rock produced from the concrete recycling operation. The mulch, topsoil and aggregate products will then be sold to internal and commercial customers in bulk and/or directly to the public via the retail landscape products sales area.

1.5.4 Retail Landscape Products Sales Center

An important component of the TCRRF will be the proposed retail landscape products sales center. The sales center will be set up to allow both large commercial bulk purchasing and individual consumer sales of the aggregate, mulch, and top soil products. The center will consist of a delineated area for customer pick up that will be separate from the processing areas and will contain a small outbuilding for an employee to record sales and control loading operations. Retail operations will be conducted from 7:00 am to 6:00 pm, five to seven days a week. A separate finished product storage area will sit adjacent to the pickup area for contained operations. It is anticipated that the sales center will sell a relatively small quantity of material per day (perhaps 5 tons or less), with an average of less than 25-30 vehicle trips per day, of small pick-up type public loads. Larger commercial bulk sales trucks will likely not exceed 20 trips per day. In total, it is expected that the average vehicle trips associated with the outbound of landscape materials will not exceed 50 per day (split between commercial trucks and consumer pick-up type vehicles).

1.5.5 Maintenance Facility to Support Operations

Most of the TCRRF operations will be supported by an on-site maintenance facility. Maintenance operations will include work on site mechanical and heavy equipment and minor site improvement work. A current complex of maintenance buildings is located in the northwest corner of the project site, and WMAC proposes to continue utilizing this facility, with some minor improvements and building updates. In addition, two temporary buildings will be added to the complex to house facilities for both the maintenance and site operations staff as needed. It is anticipated that the maintenance staff will number two full time employees working shifts between 6:00 am and 5:00 pm.

1.5.6 Waste Collection Cart and Steel Bin Storage, Painting and Repair

The project site includes various existing container storage areas for roll-offs, hand carts, and drop boxes. As part of re-development of this site proposed in this application, WMAC intends to develop an area in the eastern portion of the existing maintenance repair facility for refurbishing containers. Some container storage will continue at the facility as part of the repair and painting operations, but the extent of the storage activities will be limited compared to historical or recent levels. This activity will include a small structure where repairs will occur. Containers may be lightly shot blasted, removing old paint and grime, while leaving the protective galvanized coating beneath untouched. After that, the containers are further repaired if needed, repainted, then given new castors, lids and logos. Operational hours are anticipated to run 7:00 am to 4:00 pm, Monday through Friday. Estimated truck trips are less than 15 per day.

1.5.7 Landfill Closure and Post-Closure Maintenance Activities

Operations on site will include required activities for closure and post-closure maintenance per the approved landfill closure and post-closure maintenance plan. Closure activities will consist of excavation of cap soils, development of topsoil for the final cap, screening and processing of cap materials, final grading, installation of landfill gas, leachate and storm water related facilities, installing the permanent cap layers and vegetating the final cover layer. Post-closure activities will consist of leachate, groundwater, and surface water monitoring, landfill gas monitoring, and the inspection of the final cover system, leachate collection and disposal controls, and final environmental monitoring systems, and inspection of the site security system.

1.5.8 Landfill Gas Collection, Flare, and Energy Generation

Currently, landfill gas is collected from the Tri-Cities landfill and destroyed in an enclosed ground flare. WMAC is currently in the process of permitting a landfill gas to energy plant (LFGTE), scheduled to be operational in the third quarter of 2011. The location of the LFGTE is proposed directly adjacent to the landfill, facing the east side. The LFGTE will capture methane produced from the landfill, as a renewable energy source, and convert it into electricity. The LFGTE facility will use three Caterpillar 3520 internal combustion engine generator sets, which have been specifically configured to use landfill gas as fuel. The electricity generated by the LFGTE project will tie into the existing PG&E substation adjacent to the landfill.

SECTION 2

Justification Statement

The TCRRF will support the overall resource recovery mission of WMAC to divert, recover, and recycle through such facilities as the Davis Street Transfer Station in support of state and local policies. The TCRRF is consistent with and builds upon past land use approvals for the project site. WMAC believes that a Precise Planned District entitlement is the best vehicle to pursue a reuse plan for the Tri-Cities site. The TCRRF will encompass a number of unique uses that ultimately will provide a hub of resource recovery activity of all types; a Precise Planned District will provide the flexibility needed to develop these disparate uses in support of evolving recycling policies and market conditions. While the site will be designed for utility, WMAC is planning for a generous landscape transition area along the western boundary to ensure any users of the municipal parcel to the east and potential bay trail have a pleasing visual experience. In addition, the existing wetland areas on the southwest are proposed to remain undisturbed. Finally, the Precise Planned District entitlement provides a roadmap for any future development proposed on site to further build on WMAC's resource recovery activities.

SECTION 3

References

BT Squared. *Germantown Biomedical Treatment Facility Plan of Operation*. August 2010. Page 4.

City of Fremont. 2007. *Draft Environmental Impact Statement: Tri-Cities Recycling and Disposal Facility (TCRDF) Landfill Closure and Land Use Plan* (DEIR). Pg. iv and xvi.

Golder Associates, Inc. 2004. *Final Closure and Post-Closure Maintenance Plan for Fill Area 1 Tri-Cities Recycling and Disposal Facility* (FCPMP). Table 3.

APPENDIX B

Task Order – Acoustical and Air Impact Studies (PLN2011-00100) (prepared by Steve Kowalski, City of Fremont Planning Department)

Exhibit "A"

TASK ORDER NO. 11-01 TO MASTER SERVICE AGREEMENT FOR On-call Acoustical and Air Quality Impacts Studies, ACOUS11-1

Project Name: **Tri-Cities Resource Recovery Facility**
Project Location: 7010 Auto Mall Parkway, Fremont, CA 94538

Existing Land Use/Future Land Use: Property is currently still operating as a landfill, but is closed to the public. The landfill is approaching capacity and the applicant (Waste Management of Alameda County) is required to receive final approval of a reuse plan for the property from the City. Upon final closure of the landfill, the applicant is proposing to use the property for various resource recovery and recycling activities, including medical waste processing, concrete/AC recycling, mulch and topsoil processing and blending, and retail and wholesale sales of finished landscape products. In addition, ongoing landfill gas collection and disposal will occur along with closure/post-closure monitoring activities, as well as some corporation yard activities such as heavy equipment maintenance and trash cart/dumpster storage and repair. An EIR (SCH#2006112013) was previously certified for the activities related to the closure and final capping of the landfill and its ongoing post-closure monitoring. A methane recovery system for power generation has been previously approved, but not yet constructed. The recovery system will replace the disposal flare that currently operates on the site. There are no sensitive receptors near the site or along the truck route to the freeway.

Scope of Work: Air quality issues associated with the proposed project would involve temporary and long-term air pollutant and greenhouse gas (GHG) emissions from changes in on-site equipment operation, truck travel and other vehicle trips. Since sensitive receptors are not located near the project, issues involving community risk and odors are not anticipated and would not have to be quantitatively analyzed. The following tasks would be conducted:

1. Review the operational impacts related to the proposed final reuse plan. Anticipated activities related to AQ emissions and GHG emissions that include heavy truck traffic to and from the site, employee trips, on-site heavy equipment usage for concrete/AC recovery and recycling, mulch and topsoil processing and sales, operation of a 26,300 sq. ft. medical waste processing facility, and operation of a corporation yard for the storage and repair of haul trucks and waste collection containers. The existing operations and allowed closure activities for capping the landfill are not part of this project description.

2. Quantify emissions related to each proposed major activity at the site. Activities that emissions would be quantified include on-site equipment usage, truck travel

and vehicle travel. Indirect energy emissions associated buildings and water usage would also be quantified. The EMFAC2007 model would be used to quantify truck and vehicle emissions, while the OFFROAD model would be used to quantify emissions from on-site equipment. In the case of any portable equipment, we would rely on provided manufacturer data or CARB certification information. The methodology and thresholds of impacts used in this analysis shall be consistent with the BAAQMD 2010 CEQA Guidelines

3. Identify appropriate mitigation measures needed to reduce ongoing operational impacts of the project components to a less-than-significant level.

4. Prepare report describing project air quality and GHG impacts. The report will include a brief setting, description of existing and permitted conditions, methodology for predicting future air quality impacts (in the form of emissions), impact assessment, and mitigation measures. One round of comments and report revisions would be anticipated.

APPENDIX C

Letter from Waste Management to City – Response to Tri-Cities Information Needs Request, dated July 27, 2011

WASTE MANAGEMENT

TRI-CITIES RECYCLING AND DISPOSAL FACILITY

7010 Auto Mall Parkway
Fremont, CA 94538
(510) 624-5910
(510) 624-5913

July 27, 2011

Mr. Steve Kowalski
City of Fremont
Community Development Department, Planning
39550 Liberty St.
Fremont, CA 94538

RE: Response to Tri-Cities Information Needs Request

Dear Mr. Kowalski:

Waste Management of Alameda County, Inc. (WMAC) herein provides the information requested by Illingworth & Rodkin, Inc. dated May 12, 2011. It is our understanding that the Illingworth & Rodkin, Inc. will perform an air quality and greenhouse gas analysis as part of the Environmental Review process only on those new uses and significant modifications to existing uses proposed for the Tri-Cities Resource Recovery Facility (TCRRF). We have organized our responses in the order that was presented in the request as follows:

Equipment Information: An equipment list was provided identifying the number and type of equipment for existing and future use at the TCRRF. In order to calculate emissions from this equipment we will need information on the equipment age, horsepower, and usage for both existing and future operation. The attached spreadsheet identifies the specific information needed. In addition to this information, if the concrete/asphalt operation is to be included in the analysis we will need information on that equipment. Specific information needed for that equipment will be identified if it is determined that these operations need to be included in the analysis.

RESPONSE: The equipment information requested is provided in the attached spreadsheet. The spreadsheet has been updated to reflect all equipment used in operations at the Facility, and what is proposed for use at the TCRRF.

The concrete and asphalt recycling operation is not a new activity. The description of the operations provided in the *Precise Planned District Application* are equivalent to the description provided in the Environmental Impact Report SCH#2006112013, PLN2007-00328, and Planned District Number 2005-00262 already approved by the City of Fremont.

Biomedical Waste Processing: Steam will be used as part of the waste treatment process. How is this steam generated? Will a boiler be used to generate the steam? What type of energy is used for the steam generation (fossil fuel or electricity) and how much will be used?

RESPONSE: Steam will be produced from a boiler (250 HP) fueled by natural gas provided by PG&E. Per Section 1.5.1 of the Project Description, the facility is sized to manage approximately 75 tons per day of materials in up to three autoclave units. Each autoclave can handle approximately 1 ton of waste per hour, which equates to up to 24 hours per day of operation.

The staff performing air quality analysis can assume the boiler is operating 24 hours per day.

<u>Top Soil and Planting Mix Processing:</u> *Top soil and planting mix processing have been identified as new activities. The Project Description includes a discussion of mulch, landscape, and topsoil processing, blending and sales. This discussion appears to describe both the existing and proposed operations, without delineation of what will be the new activities that we will have to evaluate. For the proposed new top soil and plant mix processing what will be involved in this processing and what quantities will be anticipated to be processes? What equipment will be involved and what is the expected traffic (number and types of vehicles) associated with this activity?*

RESPONSE: WMAC has confirmed with City of Fremont officials that topsoil and planting mix processing, blending, and wholesale bulk sales are existing uses consistent with the Facility's current use permit (PLN 2000-00085). As such, these activities should be listed under "Continued Uses." WMAC apologizes for the confusion and will make the correction in the response to comment submittal.

<u>Retail Sales Center:</u> *How many employees will there be for the new sales center? What will be the size of the sales center building?*

RESPONSE: WMAC anticipates the retail sales center to be operated by two employees. A new building is not currently planned as part of the retail sales center. There is a potential for an "outbuilding" to be used for payment transactions. The small outbuilding would be an open air structure, with a footprint of approximately 25 square feet or less. Please also see response to the Number of Employees question below.

<u>Waste Collection Cart and Steel Bin Storage, Painting and Repair:</u> *This activity has been identified as an existing use. However, in the Project Description it says that WMAC intends to develop and area in the eastern portion of the existing maintenance and repair facility for refurbishing containers. Is this a new activity at the site? If so, how is this different from what currently occurs at the site and what new activities would be involved with the refurbishing?*

RESPONSE: As indicated in the PPD submittal, *Waste Collection Cart and Steel Bin Storage, Painting and Repair* is an existing use at the site. Small scale refurbishing (surface grinding, welding, shot blasting, and painting) and repairs of trucks, equipment, carts and bins has historically been conducted in various locations in the Maintenance Shop area. To clarify what has been described in Section 1.5.6 of the *Project Description*, a new small enclosed structure will replace existing previously used small enclosures. The same activities at the same scale will be conducted in the new enclosure.

<u>Existing and Continued Uses:</u> *Will there be any changes in the methods of operation, equipment, schedule, amounts of material processed, change in traffic, or change in level of activity associated with*

the existing and continued uses? If so, please describe so we can evaluate whether there may be increased emissions from these uses that need to be assessed for the proposed project.

RESPONSE: Other than the equipment hours and usage identified in the attached spreadsheet, no changes in the methods of operation, equipment, schedule, amounts of material processed, change in traffic, or change in level of activity are anticipated for the continued uses. Please note that upon completion of waste disposal activities and subsequent landfill closure, a net decrease in traffic and activity at the Facility is expected, from what was described in the Facility's 2007 EIR SCH# 2006112013 (2007 EIR). WMAC requests a meeting with Illingworth & Rodkin, Inc. to discuss their strategy for performing the air analysis to accommodate the 2007 EIR information.

Number of Employees: Provide the existing and future number of employees

RESPONSE: Currently, approximately twelve employees work at the facility. Historically, the Facility has employed over 70 people at one time. The future number of employees at the Facility is estimated to be 60.

Our response is based on the specific questions asked. WMAC would like to request a meeting with Illingworth & Rodkin, Inc. to ensure that all necessary information has been requested, and provided, in order to complete a representative air quality and greenhouse gas analysis. Please contact me at (510) 772-8168 or JJones16@WM.com if you have any questions or require additional information.

Sincerely,

Daniel North
District Manager

Attachment - PPD - Equipment Inventory

Tri-Cities Resource Recovery Facility
PPD - Equipment Inventory
7/27/2011

Additional Information Needed for AQ Analysis

						Existing Operation		Future Operation	
Equipment Type	Equipment Name	Number of Units for Future Operations	Number of Units Already Onsite	Engine Model Year	Engine Horsepower	Daily Hours in Use	Day per Year Use	Daily Hours in Use	Day per Year Use
Compactor	826C Cat	0	1	1989	330	3	260	0	0
Bulldozer	D-6 Caterpillar/D-8	1	3	2006	225	5	260	1	260
Loader	WA450 Komatsu or similar	2	2	2005	350	3	260	3	260
Motor Grader	140G Caterpillar	1	1	1995	205	1.5	260	1	260
Scraper	627 Caterpillar	1	1	1997	330/247	2.5	260	0.5	260
Fuel Service Truck	INTL. D300	1	1	1994	285	1.5	260	1.5	260
Water Truck (5,000 Gallons)	Freightliner FL80	1	1	2002	280	2.5	260	2.5	260
Utility Vehicles	IT28 Caterpillar	1	1	1989	128	2	260	2	260
Articulated Dump Truck	D300 Caterpillar or similar	1	1	1990	285	1	260	1	260
Rolloff truck	Volvo WX64 or similar	1	1	1991	275	1	260	1	260
Excavator	330 Caterpillar or similar	1	1	NA	222	2	260	2	260
Small Backup Pump	gasoline fuel	1	2	NA	NA	N/A	N/A	0.1	260
Pickup Trucks	gasoline fuel	2	2	NA	NA	1.5	260	1.5	260
ATV	Polaris or similar	1	1	NA	NA	1.25	260	1.25	260
Morbark Coloring Unit	Morbark	1	1	NA	25	3	260	3	260
Screener*	Keestrack or similar	1	1	2007	NA	2	260	2	260
Portable Tub Grinder*,**,***	Morbark 1300A or similar	1	1	various	NA	2	260	2	260
Portable Horizontal Grinder*,**,***	Morbark 6600 or similar	1	1	various	NA	2	260	2	260
Non-Road Portable IC Engine*,**	CAT 3412E, 3412 DITTA, or similar	1	1	various	NA	2	260	2	260
Radial Stacker****	McCloskey	1	1	various	78	7	107	7	107
Jump Stacker****	McCloskey	1	1	various	55	7	107	7	107
Excavator****	CAT325	1	1	various	168	7	107	7	107
Excavator****	CAT330	1	1	various	247	7	107	7	107
Wheel Loader****	Bobcat S150	1	1	various	49	2	107	2	107
Wheel Loader****	Hyundai HL760	1	1	various	215	4	107	4	107
Track Loader****	CAT977L	1	1	various	190	4	107	4	107
Concrete Crusher****	Pegson 4242SR or similar	1	1	various	309	8	107	8	107

*Equipment is portable, and is operated in accordance with their Statewide Portable Equipment Registrations.

** Equipment is owned and operated by a third party

*** Only one grinder would be used at the facility at any given time. Though either could be used exculsively for the 260 operational days.

****Concrete crushing equipment, assuming maximum stockpile of 150,000 tons and processing capacity of 1400 tons/day

APPENDIX D

TCRRD Conditional Use Permit, approved October 28, 1999

Approved by Planning Commission on October 28, 1999

Exhibit A

PLN 2000-00085 (formerly U - 66 – 35)

TRI-CITIES RECYCLING AND DISPOSAL FACILITY (TCRDF)

PROPOSED CONDITIONS OCTOBER 1999

1. Conformance with Exhibit "A", Master Site Plan. The Master Site Plan is to be updated at least annually. As well as showing both the existing and planned final topography, it will also depict the current circulation pattern and existing structures.

2. Compliance with all terms and conditions which may be required by the San Francisco Bay Area Regional Water Control Board with the operation conducted so as not to pollute water in the area, and with all applicable regulations and required permits of the Alameda County Waste Management Board, United States Army Corps of Engineers, Bay Area Air Quality Management District, Bay Conservation Development Commission, Alameda County Flood Control and Water Conservation District, the Alameda County Mosquito Abatement District, Alameda County Department of Environmental Health, Alameda County Water District, or any other such public agency which may have legal jurisdiction over the use and operation of the sanitary landfill site.

3. The proposed use shall conform with all applicable requirements, policies, and ordinances of the City of Fremont Zoning Ordinance, Building Code, Street Improvement Ordinance, and other City departments and agencies.

4. No open fires or burning of any type shall be permitted, with the exception of flares associated with the methane gas collection system.

5. Permittee shall conduct at least daily pickup of litter along Auto Mall Parkway from Christy Street west to the landfill site and along the southern and western perimeters of the property, adjacent to the San Francisco Bay National Wildlife Refuge.

   Warning signs shall be posted along Auto Mall Parkway at the applicant's expense, indicating the penalties for littering.

6. A current detailed operations and rehabilitation plan shall be provided to the City. In the event that changes are made to the current operations and rehabilitation plan, these documents must be updated accordingly. The plan shall contain:

   a. A filling and rehabilitation program and schedule that provides for the substantial completion of filling and rehabilitation (including landscaping) of the westerly and southerly slopes of the landfill area, such as that the Wildlife Refuge is shielded from the noise and sight generated by the landfill operation;
   b. A plan and schedule for protection of the grassland, ruderal and wetland areas located in the southwesterly portion of the property;
   c. Filling and rehabilitation program for the remainder of the fill area;
   d. A slope stability study that analyzes the project's liquefaction, subsidence, uneven settlement and mudwave potential and make recommendations to reduce those potentials;

e. A preliminary landscaping plan and schedule that utilizes native drought-resistant plant materials and provide for planting nonactive fill areas with native grasses and ·ains to minimize wind erosion and air pollution.

7. The site shall not be utilized for disposal of any wastes originating outside of the :erior City limits of the Tri-Cities of Fremont, Newark and Union City, except as allowed in ıdition 8. Recyclable materials from outside the Tri-Cities area may be accepted and/or p. :essed at the site, but in no instance is such material to be permanently retained on-site exc· ·t for those materials approved by the State as alternative daily cover and, in fact, used : cover material.

8. In the event a major fuel shortage or natural disaster precludes hauling wastes to other landfills from Alameda County communities, the TCRDF site may receive nonhazardous Group 3 wastes from those communities. Such a determination is to be made by the Environmental Services Division Administrator in consultation with the City Manager and the Alameda County Waste Management Authority.

9. The operator shall place daily cover material, as defined in CCR Title 27, over the active face at the completion of each working day. As an alternative the applicant may choose to operate under State prescribed performance standards, in accordance with CCR Title 27, subject to the approval of the Alameda County Department of Environmental Health.

10. The operating area shall be enclosed with an approved and suitable fence, in order to prevent off-site migration of blowing rubbish, and unregulated or unauthorized dumping. The fence shall be properly maintained at all times.

11. The operator shall regularly take measures to suppress dust production in the dumping area and on all roadways, paved or unpaved, at the landfill site. Measures utilized shall be to the satisfaction of the City Engineer.

12. When the site is operated under State prescribed performance standards; the premises shall be inspected at least once a week for rodent burrows, droppings or other evidence of insect breeding. Any infestation shall be effectively controlled by the proper use of poisons, gas, traps, insecticide sprays or other methods as necessary. Methods used to control pests or disease vectors shall be selected so as to minimize potential harm to any endangered, threatened or "special concern" species (as determined by state and federal resource agencies) which might inhabit adjacent wetland areas.

13. Fire fighting equipment on the premises and all comfort heating devices maintained on the premises shall be as approved by the Fremont Fire Department.

14. The siting and use of temporary structures needed for the operations of this facility may be granted by the Director of Development and Environmental Services as a minor amendment to this permit. Such minor amendments do not relieve the applicant from applying for the building permits required by the City Code and should not be construed as allowing buildings or uses not directly related to the facility operations. Impact fees shall be paid as appropriate.

15. The City Environmental Services Division Staff shall review the permit every 36 months to ensure that all conditions appended to it are complied with. Waste Management of Alameda County, Inc., or its successors or assigns shall provide information as requested by City staff.

part of this review. Fees associated with the Conditional Use Permit Review shall be paid by Waste Management of Alameda County. Findings shall be presented to the Planning Commission.

The permittee shall immediately notify the Planning Commission when it has decided to terminate the operation. The Planning Commission may review the use permit at an earlier date if it determines that conditions have changed that will affect or be affected by the subject use.

16. This use permit shall be subject to revocation or modification by the Planning Commission at such time as any of the following conditions apply:

    a. After commencement of the sanitary landfill operation there occurs a cessation of operations for a continuous period of six months.

    b. Determination of the Planning Commission that the operation of dumping and disposing of rubbish and garbage on the property in question is contrary to the conditions of this permit.

    c. There occurs the emission of objectionable odors that are detectable off the premises. Objectionableness of odors will be determined in accordance with procedures of the Bay Area Air Quality Management District.

17. The applicant shall continue to provide a Faithful Performance Bond in the amount of $100,000.00. Said bond shall be conditioned upon the performance of all the terms and conditions as set forth in applicable laws and regulations, and this use permit. Proper evidence of bonding must be presented to the City of Fremont in a form, which is approved by the City Attorney.

18. Once landfilling is completed, excessive irrigation of the final surface shall be avoided. Irrigation rates shall not exceed the rate of evapotranspiration in order to avoid a buildup of leachate in the landfill.

19. Final design of drainage at the landfill shall be approved by the Director of Development and Environmental Services.

20. Access to the San Francisco Bay National Wildlife Refuge shall be provided for Refuge personnel during the life of the landfill operation. The permittee shall provide for public access to the refuge area after termination of the landfill operation, or earlier if the Planning Commission determines that public access will not conflict with the landfill operation.

21. Use of heavy equipment shall be prohibited in wetland portions of the landfill site, as identified by the U.S. Corps of Engineers. Where such encroachment is necessary by reason of the construction of or reinforcement of levees or the excavation of wells required by other agencies, the Director of Development and Environmental Services shall be notified.

22. If suspected archaeological resources are encountered during excavation of the expansion area, the permittee shall notify the Director of Development and Environmental Services and shall halt operations in the immediate surrounding area and shall retain a qualified archaeologist to analyze the finding and make recommendations as to their disposition or other treatment.

Exhibit A

23. Twenty-four months prior to completion of the landfill operation, the permittee shall submit a landfill final closure and post closure maintenance plan, including any proposed re-use plan, for approval by the Planning Commission.

24. Appropriate sign permits shall be obtained.

25. The Director of Development and Environmental Services shall grant a use permit provided that the applicable provisions above have been complied with, and provided that the Alameda County Waste Management Authority, the Alameda County Department of Environmental Health, and the California Integrated Waste Management Board find that the proposed sanitary landfill operation is consistent with County and State plans and policies for solid waste management.

26. The Director of Development and Environmental Services shall have authority to approve minor adjustments in the proposed grading plan as may be necessitated by actions of other agencies. This authority is limited to the extent such changes do not substantially change the intent of the landfill plan, as expressed by this permit.

27. An on-site drop-off center for recycled materials shall be provided and maintained subject to the approval of the Director of Development and Environmental Services. The center shall receive, at a minimum, cardboard, newspaper, metal cans and bottle glass. The center shall operate seven days a week during normal business hours.

28. Waste Management, Inc. (Tri-Cities Waste Management) shall provide a monthly report to the Development and Environmental Services Department/Environmental Services Division and to the Tri-City Waste Disposal Authority. The report shall include monthly tonnages handled (by type and by City) and vehicles using the landfill site (franchise haul, commercial, self-haul, and other). The report shall be submitted to the satisfaction of the Director of Development and Environmental Services and the Executive Director of the Tri-City Waste Disposal Authority.

29. If the Planning Commission finds evidence that conditions of approval have not been fulfilled or that the use has resulted in a substantial adverse effect on the health, and/or general welfare of users of adjacent or proximate property, or have a substantial adverse impact on public facilities or services, the permit may be reviewed at that time. If, upon such review, the Commission finds that any of the results above have occurred, the Commission may revoke the use permit.

30. The maximum height of the landfill in Area 1 of the facility shall be 150 feet.

31. Truckloads and inactive stockpiles of cover material shall be covered to further reduce dust generation. Annual mulching or seeding of exposed, inactive landfill areas shall be implemented.

32. Trucks shall be free of excessive dust, mud and dirt when leaving the site and entering the public roadway. If the Environmental Services Division Administrator determines that this condition is not being complied with, the City may require the installation of wheel washing facilities or other corrective measures.

33. The applicant shall maintain and monitor the existing leachate collection systems. Such systems shall be extended and expanded as necessary to accommodate the increase in the height and capacity of the landfill.

Exhibit A

34. The applicant shall maintain and monitor the existing landfill gas control system. If the capacity of the existing landfill gas control system is exceeded as the height and capacity of the landfill is increased, addition of another flare or implementation of an energy recovery system shall be required.

35. The landfill's emergency response/remediation plan shall be updated as necessary and shall include provision for immediate inspection and repair of landfill should displacement occur as a result of an earthquake.

36. As long as the dredged material is stockpiled on site, the applicant shall provide measures to control erosion and siltation. The erosion and siltation measures shall be subject to the review and approval by the City Engineer.

37. At the time that the applicant submits a closure plan for the facility to the City for review, an analysis of the suitability of the dredged soil for clay or impervious cap material shall also be submitted. The findings of that analysis shall be subject to review and approval by the Director of Development and Environmental Services.

38. Any dredged material hauled to the landfill site shall be only that material which is dredged from the Dredge Disposal Site Reconfiguration Project in San Leandro. This material may only be stockpiled for future closure activities, unless otherwise approved by the Development and Environmental Services Director.

39. Acceptance of biosolids material from the Union Sanitary District Wastewater Treatment facility shall be given first priority over material imported from districts outside the Tri-City boundaries.

40. The applicant shall provide measures to control erosion and siltation during and after any site work has been completed. The erosion and siltation measures shall be subject to the review and approval by the City Engineer.

41. Biosolids transported to the landfill for use as alternative daily cover shall be monitored prior to hauling for proper moisture content, and watered as needed to prevent dust emissions during transportation. All haul trucks transporting biosolids material shall be tarped.

42. The applicant shall provide an annual report to the City Environmental Services Division Administrator on all daily, intermediate and final cover placed on the landfill. The report shall provide details of all cover by material type and weight on a monthly basis, to the satisfaction of the City Environmental Services Division Administrator.

43. Nothing in the approval of this amendment shall affect any of the terms and obligations contained in the disposal agreement, the amendment to the disposal agreement, and the Settlement Agreement between the Tri-Cities Recycling and Disposal Facility/Waste Management, Inc. and the City.

APPENDIX E

URBEMIS Output Tables

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Users\3004jjh\AppData\Roaming\Urbemis\Version9a\Projects\TriCities Material Recovery AQIA revised.urb924

Project Name: Tri-Cities Material Recovery AQIA

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (tons/year unmitigated)	0.04	0.29	0.16	0.00	0.23	0.02	0.25	0.05	0.01	0.06	28.92
2012 TOTALS (tons/year unmitigated)	1.07	1.07	1.18	0.00	0.09	0.06	0.14	0.02	0.05	0.07	210.98

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.11	0.15	0.26	0.00	0.00	0.00	176.63

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.40	0.63	5.26	0.00	0.05	0.03	500.12

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.51	0.78	5.52	0.00	0.05	0.03	676.75

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2011	0.04	0.29	0.16	0.00	0.23	0.02	0.25	0.05	0.01	0.06	28.92
Fine Grading 11/30/2011-01/11/2012	0.03	0.27	0.15	0.00	0.23	0.01	0.24	0.05	0.01	0.06	27.02
Fine Grading Dust	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.05	0.00	0.05	0.00
Fine Grading Off Road Diesel	0.03	0.27	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	25.84
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17
Asphalt 12/28/2011-01/11/2012	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27

2012	1.07	1.07	1.18	0.00	0.09	0.06	0.14	0.02	0.05	0.07	210.98
Asphalt 12/28/2011-01/11/2012	0.01	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.07
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71
Fine Grading 11/30/2011-01/11/2012	0.01	0.09	0.05	0.00	0.08	0.00	0.08	0.02	0.00	0.02	9.40
Fine Grading Dust	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.01	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.99
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Coating 01/11/2012-09/05/2012	0.93	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11
Architectural Coating	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11
Building 02/11/2012-08/22/2012	0.11	0.94	1.08	0.00	0.01	0.05	0.05	0.00	0.04	0.05	195.40
Building Off Road Diesel	0.07	0.54	0.31	0.00	0.00	0.03	0.03	0.00	0.03	0.03	61.64
Building Vendor Trips	0.03	0.37	0.27	0.00	0.00	0.01	0.02	0.00	0.01	0.01	82.21
Building Worker Trips	0.02	0.03	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.55

Phase Assumptions

Phase: Fine Grading 11/30/2011 - 1/11/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

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On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2011 - 1/11/2012 - Default Paving Description

Acres to be Paved: 1

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 2/11/2012 - 8/22/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 1/11/2012 - 9/5/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.01	0.15	0.12	0.00	0.00	0.00	176.38
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.01	0.00	0.14	0.00	0.00	0.00	0.25
Consumer Products	0.00						
Architectural Coatings	0.09						
TOTALS (tons/year, unmitigated)	0.11	0.15	0.26	0.00	0.00	0.00	176.63

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
General light industry	0.40	0.63	5.26	0.00	0.05	0.03	500.12
TOTALS (tons/year, unmitigated)	0.40	0.63	5.26	0.00	0.05	0.03	500.12

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General light industry		82.75	acres	4.00	331.00	2,895.42
					331.00	2,895.42

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.7	99.1	0.2
Light Truck < 3750 lbs	12.3	1.6	96.0	2.4
Light Truck 3751-5750 lbs	19.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General light industry				65.0	17.5	17.5

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Users\3004jjh\AppData\Roaming\Urbemis\Version9a\Projects\TriCities Material Recovery AQIA revised.urb924

Project Name: Tri-Cities Material Recovery AQIA

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	5.03	35.56	22.06	0.00	20.02	2.18	22.20	4.18	2.01	6.19	3,615.60
2012 TOTALS (lbs/day unmitigated)	15.69	33.37	21.41	0.02	20.02	2.01	22.03	4.18	1.85	6.03	3,628.78

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.69	0.83	2.23	0.00	0.01	0.01	969.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	2.04	3.00	28.45	0.03	0.26	0.16	2,866.76

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	2.73	3.83	30.68	0.03	0.27	0.17	3,836.01

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 11/30/2011-12/27/2011 Active Days: 20	2.86	23.50	13.03	0.00	20.00	1.17	21.18	4.18	1.08	5.26	2,349.34
Fine Grading 11/30/2011-01/11/2012	2.86	23.50	13.03	0.00	20.00	1.17	21.18	4.18	1.08	5.26	2,349.34
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.08	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.02
Time Slice 12/28/2011-12/30/2011 Active Days: 3	5.03	**35.56**	**22.06**	0.00	20.02	**2.18**	**22.20**	4.18	**2.01**	**6.19**	3,615.60
Asphalt 12/28/2011-01/11/2012	2.17	12.06	9.02	0.00	0.01	1.01	1.02	0.00	0.93	0.93	1,266.26
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.04	0.70	0.23	0.00	0.00	0.03	0.03	0.00	0.02	0.02	108.50
Paving Worker Trips	0.06	0.10	1.89	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.53
Fine Grading 11/30/2011-01/11/2012	2.86	23.50	13.03	0.00	20.00	1.17	21.18	4.18	1.08	5.26	2,349.34
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.08	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.02

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Time Slice 1/2/2012-1/10/2012 Active Days: 7	4.77	33.36	21.29	0.00	20.02	2.01	22.03	4.18	1.85	6.03	3,615.77
Asphalt 12/28/2011-01/11/2012	2.05	11.36	8.78	0.00	0.01	0.94	0.95	0.00	0.86	0.87	1,266.37
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	10.64	6.84	0.00	0.00	0.91	0.91	0.00	0.84	0.84	979.23
Paving On Road Diesel	0.04	0.63	0.21	0.00	0.00	0.02	0.03	0.00	0.02	0.02	108.50
Paving Worker Trips	0.06	0.09	1.73	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.65
Fine Grading 11/30/2011-01/11/2012	2.72	22.00	12.50	0.00	20.00	1.07	21.08	4.18	0.99	5.17	2,349.40
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.08

Time Slice 1/11/2012-1/11/2012 Active Days: 1	**15.69**	33.37	21.41	0.00	**20.02**	2.01	22.03	**4.18**	1.85	6.03	**3,628.78**
Asphalt 12/28/2011-01/11/2012	2.05	11.36	8.78	0.00	0.01	0.94	0.95	0.00	0.86	0.87	1,266.37
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	10.64	6.84	0.00	0.00	0.91	0.91	0.00	0.84	0.84	979.23
Paving On Road Diesel	0.04	0.63	0.21	0.00	0.00	0.02	0.03	0.00	0.02	0.02	108.50
Paving Worker Trips	0.06	0.09	1.73	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.65
Coating 01/11/2012-09/05/2012	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Architectural Coating	10.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Fine Grading 11/30/2011-01/11/2012	2.72	22.00	12.50	0.00	20.00	1.07	21.08	4.18	0.99	5.17	2,349.40
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.08
Time Slice 1/12/2012-2/10/2012 Active Days: 22	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Coating 01/11/2012-09/05/2012	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Architectural Coating	10.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00

Time Slice 2/13/2012-8/22/2012 Active Days: 138	12.58	13.59	15.78	**0.02**	0.08	0.70	0.78	0.03	0.64	0.67	2,844.90
Building 02/11/2012-08/22/2012	1.66	13.58	15.65	0.02	0.08	0.70	0.78	0.03	0.64	0.67	2,831.90
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.40	5.31	3.84	0.01	0.04	0.20	0.24	0.01	0.18	0.20	1,191.45
Building Worker Trips	0.23	0.40	7.25	0.01	0.04	0.02	0.06	0.01	0.02	0.03	747.06
Coating 01/11/2012-09/05/2012	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Architectural Coating	10.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Time Slice 8/23/2012-9/5/2012 Active Days: 10	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Coating 01/11/2012-09/05/2012	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Architectural Coating	10.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00

Phase Assumptions

Phase: Fine Grading 11/30/2011 - 1/11/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2011 - 1/11/2012 - Default Paving Description

Acres to be Paved: 1

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 2/11/2012 - 8/22/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 1/11/2012 - 9/5/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Users\3004jjh\AppData\Roaming\Urbemis\Version9a\Projects\TriCities Material Recovery AQIA revised.urb924

Project Name: Tri-Cities Material Recovery AQIA

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	5.03	35.56	22.06	0.00	20.02	2.18	22.20	4.18	2.01	6.19	3,615.60
2012 TOTALS (lbs/day unmitigated)	15.69	33.37	21.41	0.02	20.02	2.01	22.03	4.18	1.85	6.03	3,628.78

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.57	0.81	0.68	0.00	0.00	0.00	966.44

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	2.44	4.39	29.54	0.02	0.26	0.16	2,487.69

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.01	5.20	30.22	0.02	0.26	0.16	3,454.13

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 11/30/2011-12/27/2011 Active Days: 20	2.86	23.50	13.03	0.00	20.00	1.17	21.18	4.18	1.08	5.26	2,349.34
Fine Grading 11/30/2011-01/11/2012	2.86	23.50	13.03	0.00	20.00	1.17	21.18	4.18	1.08	5.26	2,349.34
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.08	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.02
Time Slice 12/28/2011-12/30/2011 Active Days: 3	5.03	**35.56**	**22.06**	0.00	20.02	**2.18**	**22.20**	4.18	**2.01**	**6.19**	3,615.60
Asphalt 12/28/2011-01/11/2012	2.17	12.06	9.02	0.00	0.01	1.01	1.02	0.00	0.93	0.93	1,266.26
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.04	0.70	0.23	0.00	0.00	0.03	0.03	0.00	0.02	0.02	108.50
Paving Worker Trips	0.06	0.10	1.89	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.53
Fine Grading 11/30/2011-01/11/2012	2.86	23.50	13.03	0.00	20.00	1.17	21.18	4.18	1.08	5.26	2,349.34
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	1.08	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.02

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Time Slice 1/2/2012-1/10/2012 Active Days: 7	4.77	33.36	21.29	0.00	20.02	2.01	22.03	4.18	1.85	6.03	3,615.77
Asphalt 12/28/2011-01/11/2012	2.05	11.36	8.78	0.00	0.01	0.94	0.95	0.00	0.86	0.87	1,266.37
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	10.64	6.84	0.00	0.00	0.91	0.91	0.00	0.84	0.84	979.23
Paving On Road Diesel	0.04	0.63	0.21	0.00	0.00	0.02	0.03	0.00	0.02	0.02	108.50
Paving Worker Trips	0.06	0.09	1.73	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.65
Fine Grading 11/30/2011-01/11/2012	2.72	22.00	12.50	0.00	20.00	1.07	21.08	4.18	0.99	5.17	2,349.40
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.08

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Time Slice 1/11/2012-1/11/2012 Active Days: 1	**15.69**	33.37	21.41	0.00	**20.02**	2.01	22.03	**4.18**	1.85	6.03	**3,628.78**
Asphalt 12/28/2011-01/11/2012	2.05	11.36	8.78	0.00	0.01	0.94	0.95	0.00	0.86	0.87	1,266.37
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	10.64	6.84	0.00	0.00	0.91	0.91	0.00	0.84	0.84	979.23
Paving On Road Diesel	0.04	0.63	0.21	0.00	0.00	0.02	0.03	0.00	0.02	0.02	108.50
Paving Worker Trips	0.06	0.09	1.73	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.65
Coating 01/11/2012-09/05/2012	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Architectural Coating	10.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Fine Grading 11/30/2011-01/11/2012	2.72	22.00	12.50	0.00	20.00	1.07	21.08	4.18	0.99	5.17	2,349.40
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.08
Time Slice 1/12/2012-2/10/2012 Active Days: 22	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Coating 01/11/2012-09/05/2012	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Architectural Coating	10.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00

Time Slice 2/13/2012-8/22/2012 Active Days: 138	12.58	13.59	15.78	**0.02**	0.08	0.70	0.78	0.03	0.64	0.67	2,844.90
Building 02/11/2012-08/22/2012	1.66	13.58	15.65	0.02	0.08	0.70	0.78	0.03	0.64	0.67	2,831.90
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.40	5.31	3.84	0.01	0.04	0.20	0.24	0.01	0.18	0.20	1,191.45
Building Worker Trips	0.23	0.40	7.25	0.01	0.04	0.02	0.06	0.01	0.02	0.03	747.06
Coating 01/11/2012-09/05/2012	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Architectural Coating	10.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Time Slice 8/23/2012-9/5/2012 Active Days: 10	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Coating 01/11/2012-09/05/2012	10.92	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Architectural Coating	10.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00

Phase Assumptions

Phase: Fine Grading 11/30/2011 - 1/11/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

11/2/2011 10:52:39 AM

Phase: Paving 12/28/2011 - 1/11/2012 - Default Paving Description

Acres to be Paved: 1

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 2/11/2012 - 8/22/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 1/11/2012 - 9/5/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

APPENDIX F

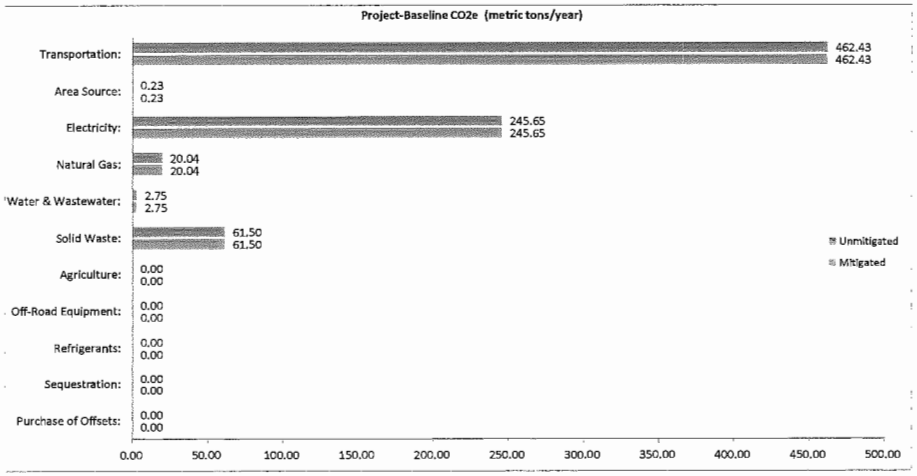
BAAQMD Greenhouse Gas Model Output Tables

Summary Results

Project Name: Tri-Cities Material Recovery AQIA
Project and Baseline Years: 2012 N/A

Results	Unmitigated Project-Baseline CO2e (metric tons/year)	Mitigated Project-Baseline CO2e (metric tons/year)
Transportation:	462.43	462.43
Area Source:	0.23	0.23
Electricity:	245.65	245.65
Natural Gas:	20.04	20.04
Water & Wastewater:	2.75	2.75
Solid Waste:	61.50	61.50
Agriculture:	0.00	0.00
Off-Road Equipment:	0.00	0.00
Refrigerants:	0.00	0.00
Sequestration:	N/A	0.00
Purchase of Offsets:	N/A	0.00
Total:	792.61	792.61

Baseline is currently: **OFF**
Baseline Project Name:
Go to Settings Tab to Turn On Baseline



Detailed Results

Unmitigated	CO2 (metric tpy)	CH4 (metric tpy)	N2O (metric tpy)	CO2e (metric tpy)	% of Total
Transportation*:				462.43	58.34%
Area Source:	0.23	0.00	0.00	0.23	0.03%
Electricity:	245.26	0.00	0.00	245.65	30.99%
Natural Gas:	19.99	0.00	0.00	20.04	2.53%
Water & Wastewater:	2.75	0.00	0.00	2.75	0.35%
Solid Waste:	0.45	2.91	N/A	61.50	7.76%
Agriculture:	0.00	0.00	0.00	0.00	0.00%
Off-Road Equipment:	0.00	0.00	0.00	0.00	0.00%
Refrigerants:	N/A	N/A	N/A	0.00	0.00%
Sequestration:	N/A	N/A	N/A	N/A	N/A
Purchase of Offsets:	N/A	N/A	N/A	N/A	N/A
Total:				792.61	100.00%

Baseline	CO2 (metric tpy)	CH4 (metric tpy)	N2O (metric tpy)	CO2e (metric tpy)	% of Total
Transportation*:				0.00	N/A
Area Source:	0.00	0.00	0.00	0.00	N/A
Electricity:	0.00	0.00	0.00	0.00	N/A
Natural Gas:	0.00	0.00	0.00	0.00	N/A
Water & Wastewater:	0.00	0.00	0.00	0.00	N/A
Solid Waste:	0.00	0.00	N/A	0.00	N/A
Agriculture:	0.00	0.00	0.00	0.00	N/A
Off-Road Equipment:	0.00	0.00	0.00	0.00	N/A
Refrigerants:	N/A	N/A	N/A	0.00	N/A
Sequestration:	N/A	N/A	N/A	N/A	N/A
Purchase of Offsets:	N/A	N/A	N/A	N/A	N/A
Total:				0.00	0.00%

* Several adjustments were made to transportation emissions after they have been imported from URBEMIS.
After importing from URBEMIS, CO2 emissions are converted to metric tons and then adjusted to account for the "Pavley"
regulation. Then, CO2 is converted to CO2e by multiplying by 100/95 to account for the contribution of other GHGs (CH4, N2O, and HFCs [from leaking air conditioners])
Finally, CO2e is adjusted to account for th low carbon fuels rule.

Mitigated	CO2 (metric tpy)	CH4 (metric tpy)	N2O (metric tpy)	CO2e (metric tpy)	% of Total
Transportation*:				462.43	58.34%
Area Source:	0.23	0.00	0.00	0.23	0.03%
Electricity:	245.26	0.00	0.00	245.65	30.99%
Natural Gas:	19.99	0.00	0.00	20.04	2.53%
Water & Wastewater:	2.75	0.00	0.00	2.75	0.35%
Solid Waste:	0.45	2.91	N/A	61.50	7.76%
Agriculture:	0.00	0.00	0.00	0.00	0.00%
Off-Road Equipment:	0.00	0.00	0.00	0.00	0.00%
Refrigerants:	N/A	N/A	N/A	0.00	0.00%
Sequestration:	N/A	N/A	N/A	0.00	0.00%
Purchase of Offsets:	N/A	N/A	N/A	0.00	0.00%
Total:				792.61	100.00%

Mitigation Measures Selected:

Transportation: Go to the following tab: Transp. Detail Mit for a list of the transportation mitigation measures selected (in URBEMIS)

Electricity: The following mitigation measure(s) have been selected to reduce electricity emissions.

Natural Gas: The following mitigation measure(s) have been selected to reduce natural gas emissions.

Water and Wastewater: The following mitigation measure(s) have been selected to reduce water and wastewater emissions.

Solid Waste: The following mitigation measure has been selected to reduce solid waste related GHG emissions.

Ag: No existing mitigation measures available.

Off-Road Equipment: No existing mitigation measures available.

Refrigerants: The following mitigation measure has ben selected to reduce refrigerant emissions:

Carbon Sequestration: Project does not include carbon sequestration through tree planting.

Emission Offsets/Credits: Project does not include purchase of emission offsets/credits.